

Appendix E  
Summary of First Quarter 2009  
Soil Vapor Sampling Results

## **APPENDIX E**

### **SUMMARY OF FIRST QUARTER 2009 SOIL VAPOR SAMPLING RESULTS**

This appendix presents a summary of the soil vapor sampling conducted at the Poway Landfill and surrounding property on 27 January 2009. The soil vapor survey was conducted in general accordance with the January 2003 California Department of Toxic Substances Control (DTSC) advisory. The laboratory data were validated by Geosyntec personnel. Based on the validation, the data were determined to be usable as qualified.

#### **FIELD PROCEDURES**

As discussed with the San Diego County, Department of Environmental Health, Local Enforcement Agency (LEA), in a meeting on 7 January 2009 the number of soil vapor monitoring wells to be sampled reduced from 10 onsite and 22 offsite soil vapor wells to 4 onsite and 4 offsite soil vapor wells. Routine soil vapor monitoring has been performed at the site since April 2006. Although the estimated risk to human health based on soil vapor data collected from the site since April 2006 are below levels of concern according to the DTSC, San Diego County Department of Environmental Health (DEH), and the United States Environmental Protection Agency (USEPA) [Geosyntec, 2006], the LEA has requested the County continue monitoring on- and off-site soil vapor concentrations to further evaluate potential seasonal variations.

Four onsite (PVP-1A, PVP-2A, PVP-4A, and PVP-5) and four offsite (VW-3A, VW-4A, VW-5A, and VW-8A) were purged and sampled on 27 January 2009 using methods consistent with the previous sampling events. An attempt to purge and sample onsite soil vapor well PVP-3A was also made on 27 January 2009. During purging of PVP-3A a vacuum greater than 100 inches of water column developed, therefore a soil vapor sample was not collected from PVP-3A. Soil vapor samples were collected using laboratory-calibrated and certified clean flow controllers set at flow rates of approximately 167 ml/min. Soil vapor sample collection logs are provided in Attachment A-1.

#### **ANALYTICAL RESULTS**

The following VOCs are indicators of LFG migration or have previously accounted for the greatest portion of the estimated risk and therefore, comprise the primary constituents of concern (COCs):

- Dichlorodifluoromethane (DCDFM or Freon 12)
- Tetrachloroethene (PCE)
- Trichloroethene (TCE)
- cis-1,2-Dichloroethene (cis-1,2-DCE)
- Vinyl chloride
- Benzene
- Ethylbenzene
- Toluene
- Xylenes

Certificates of analysis and chain-of-custody documents are presented in Attachment A-2. A summary of soil vapor analytical results for the January 2009 monitoring event, including QA/QC sample results, are provided in Table A-1. Reported concentrations of benzene, PCE, and TCE in soil vapor samples collected onsite and offsite at the Poway Landfill from April 2006 through January 2009 are summarized in Table A-2.

### **Background Soil Vapor Wells**

Soil vapor samples collected from background soil vapor well PVP-5 during the January 2009 event contained toluene at a concentration of 11 parts per billion by volume (ppbv). No other COCs were detected at concentrations greater than their respective reporting limits (RLs).

Fixed gases were measured in the field using a Landtech GEM 2000 landfill gas meter and recorded on the soil vapor sample collection logs (Attachment A-1). Fixed gas concentrations in the soil vapor purged from the background soil vapor wells were consistent with native soil vapor and those measured during the previous sampling events [Geosyntec, 2008a].

### **Property Boundary Soil Vapor Wells**

Soil vapor samples collected from soil vapor wells along the southern property boundary during the January 2009 sampling event contained the following COCs:

- DCDFM at concentrations ranging from 2.9 to 78 ppbv (4 of 4 samples);
- Benzene at a concentration of 6.8 ppbv (1 of 4 samples);
- PCE at a concentration of 1.2 ppbv (1 of 4 samples); and

- Toluene at a concentration of 28 ppbv (1 of 4 samples);
- Ethylbenzene at a concentration of 13 ppbv (1 of 4 samples);
- m,p-Xylene at a concentration of 53 ppbv (1 of 4 samples); and
- o-Xylene at a concentration of 22 ppbv (1 of 4 samples).

No other COCs were detected at concentrations greater than their respective RLs. Fuel related compounds detected in the soil vapor sample collected from PVP-1A have generally not been previously detected in samples collected from this vapor well.

Fixed gas concentrations in the soil vapor purged from the onsite soil vapor wells along the south property boundary were consistent with native soil vapor and those measured during previous sampling events [Geosyntec, 2008a].

### **Offsite Soil Vapor Wells**

Soil vapor samples collected from soil vapor wells offsite within the residential area south of the site during the January 2009 sampling event contained the following COCs:

- DCDFM at concentrations ranging from 2.5 to 3.4 ppbv (2 of 4 samples);
- PCE at concentrations ranging from 1.3 to 15 ppbv (3 of 4 samples);
- TCE at a concentration of 1.2 ppbv (1 of 4 samples);
- Benzene at a concentration of 4.4 ppbv (1 of 4 samples);
- Ethylbenzene at a concentration of 3.1 ppbv (1 of 4 samples);
- m,p-Xylene at a concentration of 3.2 ppbv (1 of 4 samples);
- o-Xylene at a concentration of 1.6 ppbv (1 of 4 samples); and
- Toluene at concentrations ranging from 1.8 to 1.9 ppbv (2 of 4 samples).

No other COCs were detected at concentrations greater than their respective RLs.

Fixed gas concentrations in the soil vapor purged from the offsite soil vapor wells within the residential area south of the site were consistent with native soil vapor and those measured during the previous sampling events [Geosyntec, 2008a].

### **Discussion of Soil Vapor Data**

VOC concentrations in soil vapor samples collected from onsite and offsite soil vapor wells on 27 January 2009 were generally consistent with the range of concentrations observed during

previous sampling events [Geosyntec, 2008a]. Benzene concentrations have generally remained within historical concentrations except for increasing concentrations in the soil vapor samples collected from onsite well PVP-1A and offsite well VW-5A since the April 2008 soil vapor monitoring event. PCE concentrations have generally decreased or remained within the range of historical concentrations in onsite and offsite soil vapor wells since the April and May 2006 monitoring events. TCE concentrations in onsite and offsite soil vapor samples have generally decreased or remained within the range of historical concentrations since the April and May 2006 sampling events. Onsite and offsite soil vapor fixed gas concentrations were generally consistent with native soil vapor concentrations. Time series plots for benzene, PCE, and TCE in onsite and offsite soil vapor are provided in Attachment E-3.

## **CONCLUSIONS**

The estimated risk calculated from the April and May 2006 vapor data were below levels of concern according to DTSC, DEH, and USEPA. Additionally, the concentrations observed during the January 2009 sampling event were consistent with or lower than concentrations observed during the April and May 2006 sampling events. Therefore, the estimated risk based on the January 2009 vapor data can be reasonably expected to be consistent with or less than estimated risk from the April and May 2006 sampling events. Although fuel related VOCs were detected in sample collected from onsite soil vapor well PVP-1A and offsite soil vapor well VW-5A, the detected compounds are generally not consistent with historical results and may be attributable to additional off-site sources. Additionally, the concentrations of fuel related VOCs detected in onsite (PVP-1A) and offsite (VW-5A) soil vapor were below California Human Health Screening Levels (CHHSLs) for a residential land use scenario. The significance of the detections of fuel related VOCs in shallow soil vapor will be further evaluated in future monitoring events.

**Tables**

- Table E-1      Summary of Soil Vapor Analytical Results  
Table E-2      Summary of Historical Benzene, PCE, and TCE Concentrations in Soil Vapor

**Figures**

- Figure E-1      Soil Vapor Sample Locations  
Figure E-2      Benzene Concentrations in Soil Vapor January 2009  
Figure E-3      PCE Concentrations in Soil Vapor January 2009  
Figure E-4      TCE Concentrations in Soil Vapor January 2009

**Attachments**

- Attachment E-1      Soil Vapor Sample Collection Logs  
Attachment E-2      Soil Vapor Laboratory Analytical Certificates  
Attachment E-3      Soil Vapor Time Series Plots

## TABLES

Table E-1  
Summary of Soil Vapor Laboratory Analytical Results  
Poway Landfill  
Poway, California

| Units | Onsite Soil Vapor Wells |           |           |           |           | Offsite Soil Vapor Wells |           |           |           | QA/QC Samples |           |
|-------|-------------------------|-----------|-----------|-----------|-----------|--------------------------|-----------|-----------|-----------|---------------|-----------|
|       | PVP-1A                  | PVP-2A    | PVP-4A    | PVP-4C*   | PVP-5     | VW-3A                    | VW-4A     | VW-5A     | VW-8A     | QCFB          | QCTB      |
|       | 1/27/2009               | 1/27/2009 | 1/27/2009 | 1/27/2009 | 1/27/2009 | 1/27/2009                | 1/27/2009 | 1/27/2009 | 1/27/2009 | 1/27/2009     | 1/27/2009 |

**VOCs by Modified EPA Method TO-15<sup>1</sup>**

|                                    |      |        |        |        |        |        |        |        |        |        |        |         |
|------------------------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1,1,1-Trichloroethane              | ppbv | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | 2.4    | ND<1.1 | ND<0.50 |
| 1,2,4-Trimethylbenzene             | ppbv | 20     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| 1,3,5-Trimethylbenzene             | ppbv | 19     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| 2,2,4-Trimethylpentane             | ppbv | 4.4    | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| 2-Butanone (Methyl Ethyl Ketone)   | ppbv | 23     | 2.1    | ND<1.2 | ND<1.1 | 1.7    | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| 2-Propanol                         | ppbv | 5.6    | ND<4.8 | ND<4.6 | ND<4.6 | ND<4.8 | ND<4.6 | ND<4.8 | ND<4.8 | ND<4.5 | ND<4.6 | ND<2.0  |
| 4-Ethyltoluene                     | ppbv | 19     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Acetone                            | ppbv | 23     | 6.7    | ND<4.6 | 8.0    | 9.0    | ND<4.6 | 12     | 13     | ND<4.5 | ND<4.6 | ND<2.0  |
| Benzene                            | ppbv | 6.8    | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | 4.4    | ND<1.1 | ND<1.1 | ND<0.50 |
| Chloroform                         | ppbv | ND<1.2 | ND<1.2 | ND<1.2 | 1.2    | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Cyclohexane                        | ppbv | 1.5    | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Ethanol                            | ppbv | 200    | 5.1    | ND<4.6 | ND<4.6 | 14     | ND<4.6 | 6.6    | ND<4.8 | ND<4.5 | ND<4.6 | ND<2.0  |
| Ethyl Benzene                      | ppbv | 13     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | 3.1    | ND<1.1 | ND<1.1 | ND<0.50 |
| Freon 11                           | ppbv | ND<1.2 | ND<1.2 | ND<1.2 | 1.4    | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Freon 113                          | ppbv | 2.2    | 220    | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | 2.3    | ND<1.1 | ND<1.1 | ND<0.50 |
| Freon 114                          | ppbv | ND<1.2 | 8.2    | 1.7    | 1.6    | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Freon 12 (dichlorodifluoromethane) | ppbv | 2.9    | 78     | 30     | 29     | ND<1.2 | ND<1.2 | 2.5    | 3.4    | ND<1.1 | ND<1.1 | ND<0.50 |
| Heptane                            | ppbv | 17     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | 1.2    | ND<1.1 | ND<1.1 | ND<0.50 |
| Hexane                             | ppbv | 17     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | 1.5    | ND<1.1 | ND<1.1 | ND<0.50 |
| m,p-Xylene                         | ppbv | 53     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | 3.2    | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| o-Xylene                           | ppbv | 22     | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | 1.6    | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Propylbenzene                      | ppbv | 3.9    | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.1 | ND<0.50 |
| Tetrachloroethene                  | ppbv | ND<1.2 | 1.2    | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | 15     | 3.9    | 1.3    | ND<1.1 | ND<0.50 |
| Toluene                            | ppbv | 28     | ND<1.2 | ND<1.2 | ND<1.1 | 11     | ND<1.2 | 1.9    | ND<1.2 | 1.8    | ND<1.1 | ND<0.50 |
| Trichloroethene                    | ppbv | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.1 | ND<1.2 | ND<1.2 | ND<1.2 | ND<1.2 | 1.2    | ND<1.1 | ND<0.50 |

ppbv - parts per billion by volume

ND - Analyte not detected at a concentration greater than the detection limit

VOCs - Volatile Organic Compounds

\*- Duplicate sample for PVP-4A labeled PVP-4C

<sup>1</sup> - Other VOCs were not detected at concentrations greater than their respective detection limits

Table E-2  
 Summary of Historical Benzene, PCE, and TCE Concentrations in Soil Vapor  
 Poway Landfill  
 Poway, California

| Onsite Soil Vapor Wells            |           |         |        |        |
|------------------------------------|-----------|---------|--------|--------|
| Sample ID                          | Date      | Benzene | TCE    | PCE    |
|                                    |           | ppbv    | ppbv   | ppbv   |
| Background Soil Vapor Wells        |           |         |        |        |
| PVP-5                              | 4/19/2006 | ND<1.3  | ND<1.3 | ND<1.3 |
|                                    | 5/8/2006  | ND<1.1  | ND<1.1 | 1.2    |
|                                    | 7/24/2006 | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 1/22/2007 | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/23/2007 | ND<1.0  | ND<1.0 | ND<1.0 |
|                                    | 4/21/2008 | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 1/27/2009 | ND<1.2  | ND<1.2 | ND<1.2 |
| PVP-6                              | 4/19/2006 | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 5/8/2006  | ND<1.2  | ND<1.2 | 1.2    |
|                                    | 7/24/2006 | ND<1.1  | ND<1.1 | 1.2    |
|                                    | 1/22/2007 | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/23/2007 | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 4/21/2008 | 1.7     | ND<1.2 | ND<1.2 |
| Refuse Soil Vapor Wells            |           |         |        |        |
| PVP-7A                             | 4/6/2006  | 100     | 19     | ND<4.7 |
| PVP-8                              | 4/6/2006  | 130     | 36     | 18     |
| PVP-9                              | 4/6/2006  | 180     | 37     | 27     |
| PVP-10A                            | 4/6/2006  | 140     | 19     | ND<4.8 |
| Soil Vapor Wells Underlying Refuse |           |         |        |        |
| PVP-7B                             | 4/6/2006  | 87      | 10     | 3.3    |
| PVP-10B                            | 4/6/2006  | 120     | 23     | 5.0    |

Table E-2  
 Summary of Historical Benzene, PCE, and TCE Concentrations in Soil Vapor  
 Poway Landfill  
 Poway, California

| Sample ID                          | Date                   | Benzene                | TCE    | PCE    |
|------------------------------------|------------------------|------------------------|--------|--------|
|                                    |                        | ppbv                   | ppbv   | ppbv   |
| Property Boundary Soil Vapor Wells |                        |                        |        |        |
| PVP-1                              | 2/2/2006 <sup>1</sup>  | 120                    | ND<7.8 | ND<7.8 |
|                                    | 2/14/2006 <sup>1</sup> | 140                    | ND<9.2 | ND<9.2 |
| PVP-1D                             | 2/2/2006*              | 150                    | ND<3.1 | ND<3.1 |
| PVP-1A                             | 4/19/2006              | ND<1.3                 | ND<1.3 | 1.8    |
|                                    | 5/8/2006               | ND<1.3                 | ND<1.3 | 2.1    |
|                                    | 7/24/2006              | ND<1.3                 | ND<1.3 | 2.9    |
|                                    | 1/22/2007              | ND<1.1                 | ND<1.1 | ND<1.1 |
|                                    | 7/23/2007              | ND<1.3                 | ND<1.3 | ND<1.3 |
|                                    | 4/21/2008              | ND<1.2                 | ND<1.2 | 1.5    |
|                                    | 1/27/2009              | 6.8                    | ND<1.2 | ND<1.2 |
|                                    | PVP-2A-R               | 2/14/2006 <sup>1</sup> | 9.5    | ND<1.1 |
| PVP-2AD-R                          | 2/14/2006*             | 8.6                    | ND<2.4 | 4.2    |
| PVP-2A                             | 2/2/2006               | 19                     | ND<1.2 | ND<1.2 |
|                                    | 2/14/2006 <sup>1</sup> | 11                     | 5.2    | ND<4.7 |
|                                    | 5/8/2006               | ND<1.1                 | ND<1.1 | 3.6    |
|                                    | 7/24/2006              | ND<1.2                 | ND<1.2 | 3.4    |
|                                    | 1/22/2007              | ND<1.1                 | ND<1.1 | 2.5    |
|                                    | 7/23/2007              | 3.8                    | ND<1.2 | ND<1.2 |
|                                    | 4/21/2008              | ND<1.2                 | ND<1.2 | 1.8    |
|                                    | 1/27/2009              | ND<1.2                 | ND<1.2 | 1.2    |
| PVP-2B-R                           | 2/14/2006 <sup>1</sup> | 100                    | ND<32  | ND<32  |
| PVP-2B                             | 2/2/2006 <sup>1</sup>  | ND<1.1                 | ND<1.1 | ND<1.1 |
|                                    | 2/14/2006              | ND<2.3                 | ND<2.3 | ND<2.3 |
|                                    | 5/8/2006 <sup>1</sup>  | 3.0                    | ND<3.0 | ND<3.0 |
|                                    | PVP-3A                 | 2/2/2006               | 36     | ND<1.2 |
| PVP-3A                             | 2/14/2006 <sup>1</sup> | 26                     | ND<1.2 | ND<1.2 |
|                                    | 4/19/2006              | 1.4                    | ND<1.3 | ND<1.3 |
|                                    | 4/19/2006*             | 5.4                    | ND<1.1 | 5.4    |
|                                    | 5/8/2006               | 1.5                    | ND<1.2 | 4.2    |
|                                    | 5/8/2006*              | 1.3                    | ND<1.2 | 1.4    |
|                                    | 7/24/2006              | ND<1.2                 | ND<1.2 | 1.2    |
|                                    | 1/22/2007              | ND<1.1                 | ND<1.1 | ND<1.1 |
|                                    | 1/22/2007*             | ND<1.1                 | ND<1.1 | 1.1    |
| PVP-3B                             | 7/23/2007              | ND<1.2                 | ND<1.2 | ND<1.2 |
| PVP-3B                             | 2/2/2006               | 58                     | ND<6.2 | ND<6.2 |
|                                    | 2/14/2006              | 92                     | ND<4.8 | ND<4.8 |
|                                    | 4/19/2006              | 6.2                    | ND<1.2 | 5.6    |
|                                    | 5/8/2006               | 7.0                    | ND<1.3 | 3.8    |
| PVP-4A                             | 4/20/2006              | ND<1.1                 | ND<1.1 | 3.2    |
|                                    | 5/8/2006               | ND<1.2                 | ND<1.2 | 3.4    |
|                                    | 7/24/2006              | ND<1.2                 | ND<1.2 | 4.0    |
|                                    | 1/22/2007              | ND<1.2                 | ND<1.2 | 2.2    |
|                                    | 7/23/2007              | ND<1.2                 | ND<1.2 | 3.8    |
|                                    | 7/23/2007*             | ND<1.3                 | ND<1.3 | 3.8    |
|                                    | 4/21/2008              | ND<1.2                 | ND<1.2 | 1.9    |
|                                    | 4/21/2008*             | ND<1.2                 | ND<1.2 | 1.8    |
|                                    | 1/27/2009              | ND<1.2                 | ND<1.2 | ND<1.2 |
|                                    | 1/24/2009              | ND<1.1                 | ND<1.1 | ND<1.1 |
| PVP-4B                             | 5/8/2006 <sup>1</sup>  | ND<370                 | ND<370 | ND<370 |

Table E-2  
 Summary of Historical Benzene, PCE, and TCE Concentrations in Soil Vapor  
 Poway Landfill  
 Poway, California

| Offsite Permanent Soil Vapor Wells |                        |         |        |        |
|------------------------------------|------------------------|---------|--------|--------|
| Sample ID                          | Date                   | Benzene | TCE    | PCE    |
|                                    |                        | ppbv    | ppbv   | ppbv   |
| 100 feet from Property Boundary    |                        |         |        |        |
| VW-1A                              | 4/20/2006              | ND<4.9  | ND<4.9 | ND<4.9 |
|                                    | 5/8/2006               | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 7/24/2006              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 7/24/2006*             | 1.5     | ND<1.2 | ND<1.2 |
|                                    | 1/22/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.3  | ND<1.3 | ND<1.3 |
|                                    | 4/21/2008              | ND<1.3  | ND<1.3 | ND<1.3 |
| VW-1B                              | 4/20/2006              | 2.9     | ND<1.2 | 3.3    |
|                                    | 5/9/2006               | ND<1.2  | ND<1.2 | 3.3    |
|                                    | 7/24/2006              | ND<1.2  | ND<1.2 | 1.6    |
|                                    | 1/22/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/23/2007              | ND<1.3  | ND<1.3 | ND<1.3 |
| VW-2A                              | 4/20/2006              | 5.9     | ND<1.1 | 4.1    |
|                                    | 4/20/2006*             | 6.5     | ND<1.2 | 4.1    |
|                                    | 5/9/2006               | 1.2     | ND<1.2 | 2.5    |
|                                    | 7/25/2006              | ND<1.3  | ND<1.3 | ND<1.3 |
|                                    | 1/22/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/23/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
| VW-2B                              | 5/11/2006 <sup>1</sup> | ND<220  | ND<220 | ND<220 |
| VW-3A                              | 4/20/2006              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 5/9/2006               | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 7/24/2006              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 1/23/2007              | ND<1.0  | ND<1.0 | ND<1.0 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 7/24/2007*             | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 4/21/2008              | ND<1.2  | ND<1.2 | ND<1.2 |
| VW-3B                              | 5/11/2006 <sup>1</sup> | ND<81   | ND<81  | ND<81  |
| VW-4A                              | 4/24/2006              | ND<1.2  | ND<1.2 | 51     |
|                                    | 5/9/2006               | ND<1.2  | ND<1.2 | 59     |
|                                    | 5/9/2006*              | ND<1.1  | ND<1.1 | 49     |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | 73     |
|                                    | 1/22/2007              | ND<1.1  | ND<1.1 | 9.6    |
|                                    | 7/23/2007              | ND<1.1  | ND<1.1 | 62     |
|                                    | 4/21/2008              | ND<1.2  | ND<1.2 | 36     |
| VW-4B                              | 1/27/2009              | ND<1.2  | ND<1.2 | 15     |
| VW-4B                              | 4/24/2006              | 6.0     | ND<1.1 | 62     |
|                                    | 5/9/2006               | 2.4     | 1.5    | 88     |
|                                    | 7/25/2006              | ND<1.3  | ND<1.3 | 69     |
|                                    | 1/22/2007              | ND<1.2  | ND<1.2 | 60     |
|                                    | 7/23/2007              | ND<1.2  | ND<1.2 | 69     |
| VW-5A                              | 5/9/2006               | ND<1.2  | 1.8    | 19     |
|                                    | 7/24/2006              | ND<1.2  | ND<1.2 | 20     |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | 8.2    |
|                                    | 7/24/2007              | ND<1.1  | ND<1.1 | 23     |
|                                    | 4/21/2008              | 1.2     | ND<1.2 | 10     |
|                                    | 1/27/2009              | 4.4     | ND<1.2 | 3.9    |
| VW-5B                              | 5/11/2006 <sup>1</sup> | ND<19   | ND<19  | ND<19  |
| VW-6A                              | 5/10/2006              | 3.8     | ND<1.2 | 6.2    |
|                                    | 7/24/2006              | ND<1.3  | ND<1.3 | 3.1    |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
| VW-6B                              | 5/11/2006 <sup>1</sup> | ND<10   | ND<10  | 11     |
| VW-7A                              | 4/24/2006              | 2.6     | 19     | 3.7    |
|                                    | 4/24/2006*             | 2.6     | 19     | 3.6    |
|                                    | 5/10/2006              | 2.2     | 5.6    | 2.0    |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | 2.6    |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 4/22/2008              | ND<1.2  | ND<1.2 | ND<1.2 |

Table E-2  
 Summary of Historical Benzene, PCE, and TCE Concentrations in Soil Vapor  
 Poway Landfill  
 Poway, California

| Offsite Permanent Soil Vapor Wells |                        |         |        |        |
|------------------------------------|------------------------|---------|--------|--------|
| Sample ID                          | Date                   | Benzene | TCE    | PCE    |
|                                    |                        | ppbv    | ppbv   | ppbv   |
| 300 feet from Property Boundary    |                        |         |        |        |
| VW-8A                              | 4/24/2006              | ND<1.1  | 3.7    | 2.1    |
|                                    | 5/9/2006               | ND<1.2  | 2.8    | 2.2    |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | 2.8    |
|                                    | 7/25/2006*             | ND<1.2  | ND<1.2 | 3      |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 1/23/2007*             | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | 1.9    |
|                                    | 1/27/2009              | ND<1.1  | 1.2    | 1.3    |
| VW-8B                              | 4/25/2006              | ND<1.1  | ND<1.1 | 1.7    |
|                                    | 5/9/2006               | ND<1.1  | ND<1.1 | 1.9    |
|                                    | 7/25/2006              | ND<1.1  | ND<1.1 | 1.9    |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | 1.4    |
| VW-9                               | 5/11/2006 <sup>1</sup> | ND<150  | ND<150 | ND<150 |
| VW-10                              | 4/25/2006              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 4/25/2006*             | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 5/10/2006              | 2.5     | ND<1.1 | ND<1.1 |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 1/23/2007              | 1.3     | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 4/22/2008              | 3.0     | ND<1.2 | ND<1.2 |
| 1000 feet from Property Boundary   |                        |         |        |        |
| VW-11                              | 4/25/2006              | 1.5     | ND<1.1 | ND<1.1 |
|                                    | 5/10/2006              | 1.8     | ND<1.1 | ND<1.1 |
|                                    | 5/10/2006*             | ND<1.1  | ND<1.1 | 1.3    |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.3  | ND<1.3 | ND<1.3 |
|                                    | 4/22/2008              | 4.9     | ND<1.1 | 4.3    |
| VW-12                              | 5/10/2006              | ND<1.2  | ND<1.2 | 4.3    |
|                                    | 6/1/2006               | ND<1.1  | ND<1.1 | 6.7    |
|                                    | 6/1/2006*              | ND<1.2  | ND<1.2 | 6.7    |
|                                    | 7/25/2006              | ND<1.2  | ND<1.2 | 9.3    |
|                                    | 1/23/2007              | ND<1.2  | ND<1.2 | 3.6    |
|                                    | 7/24/2007              | ND<1.1  | ND<1.1 | 9.2    |
|                                    | 4/22/2008              | ND<1.2  | ND<1.2 | ND<1.2 |
| VW-13                              | 4/22/2008*             | ND<1.1  | ND<1.1 | 2.9 J  |
|                                    | 5/10/2006              | 5.0     | 4.2    | 2.6    |
|                                    | 6/1/2006               | ND<1.3  | 2.4    | 5.3    |
|                                    | 7/25/2006              | ND<1.3  | ND<1.3 | 2.8    |
|                                    | 1/23/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 7/24/2007              | ND<1.3  | ND<1.3 | ND<1.3 |
| VW-14                              | 4/22/2008              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 5/10/2006              | 3.7     | 3.5    | 1.4    |
|                                    | 6/1/2006               | ND<1.3  | 4.0    | 1.5    |
|                                    | 7/25/2006              | ND<1.3  | ND<1.3 | ND<1.3 |
|                                    | 1/23/2007              | ND<1.1  | ND<1.1 | ND<1.1 |
|                                    | 7/24/2007              | ND<1.2  | ND<1.2 | ND<1.2 |
|                                    | 4/22/2008              | ND<1.2  | ND<1.2 | ND<1.2 |

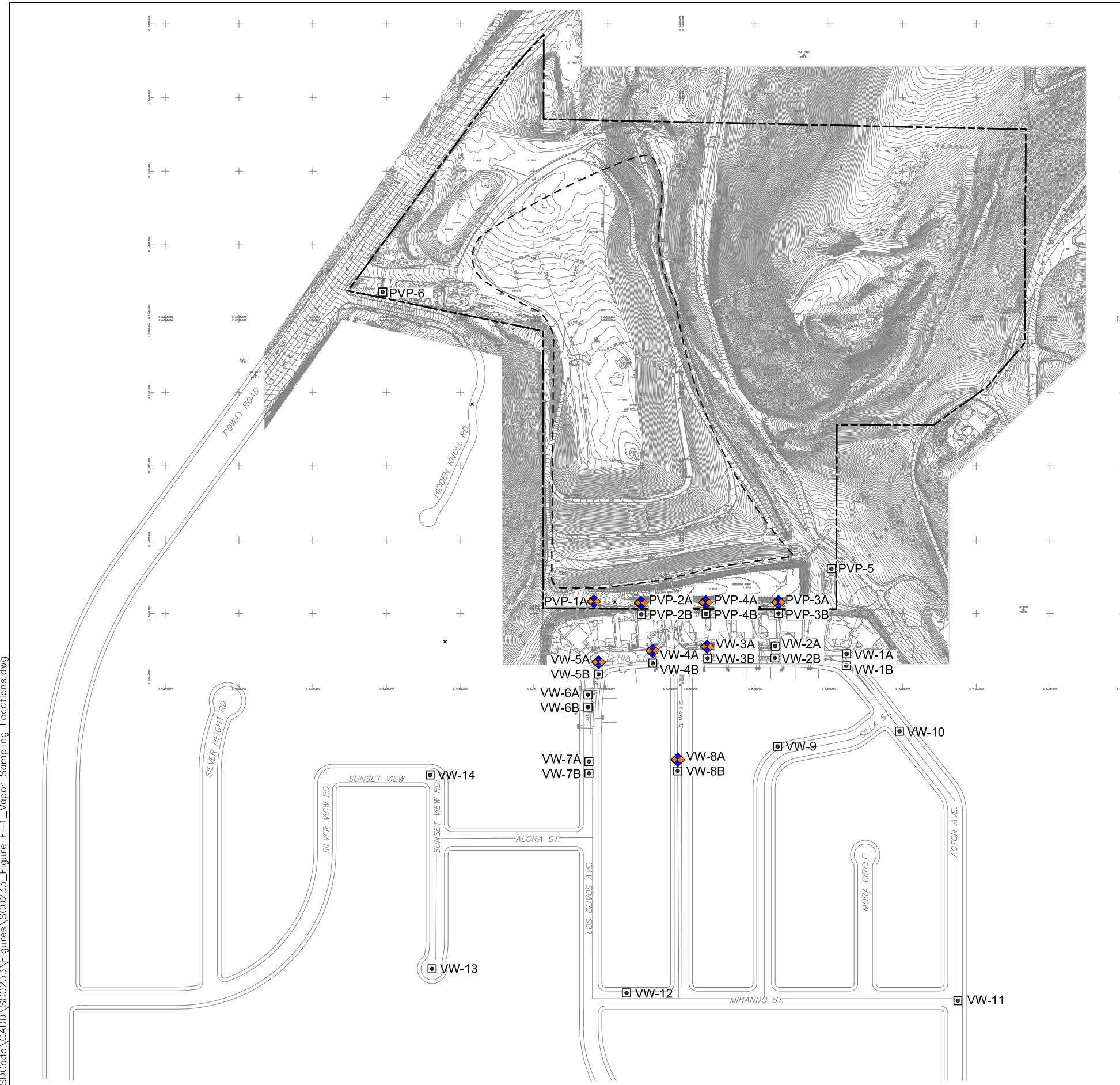
ppbv -parts per billion by volume

\* Duplicate sample collected at vapor well

<sup>1</sup> - Tracer gas breakthrough in soil vapor well

J - Estimated concentration greater than or equal to the method detection limit, but less than the reporting limit

## **FIGURES**



## LEGEND

-  SOIL VAPOR WELL
  -  SENTINEL SOIL VAPOR WELL
  - — — APPROXIMATE PROPERTY BOUNDARY
  - — — — APPROXIMATE TRASH/REFUSE BOUNDARY
  - ===== EXISTING PAVED ROAD
  - ===== EXISTING DIRT ROAD

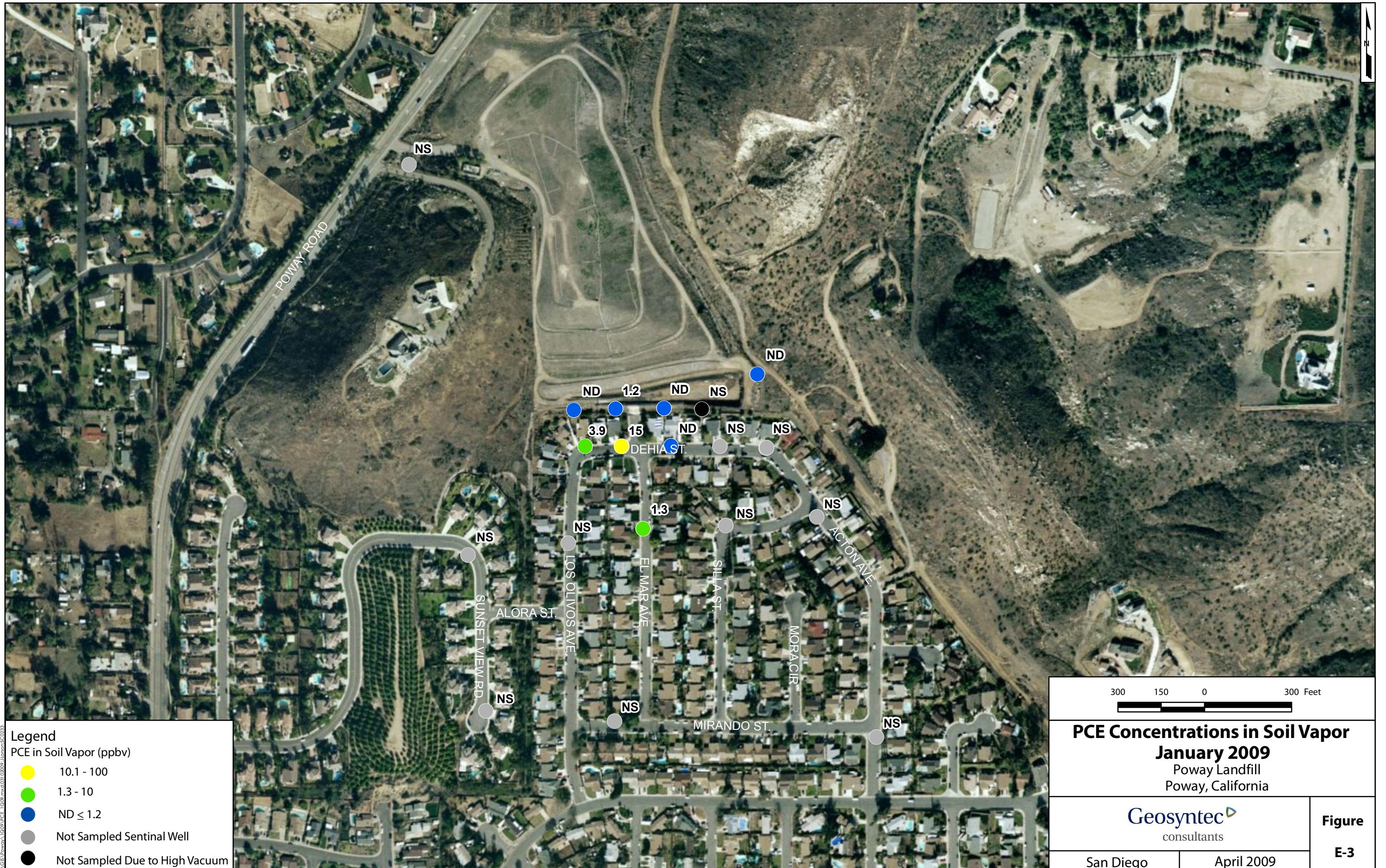
**NOTE:**

A SOIL VAPOR SAMPLE COULD NOT BE COLLECTED FROM  
ONSITE SOIL VAPOR WELL PVP-3A DURING THE FIRST  
QUARTER 2009 SOIL VAPOR SAMPLING EVENT.  
THEREFORE A SOIL VAPOR SAMPLE WAS COLLECTED  
FROM ONSITE SENTINEL SOIL VAPOR WELL PVP-5.



SOIL VAPOR SAMPLING LOCATIONS  
POWAY LANDFILL  
POWAY, CALIFORNIA







## **ATTACHMENT E-1**

### **Soil Vapor Sample Collection Logs**



## CALIBRATION LOG FOR AIR SAMPLING

-- Not Applicable

## SOIL GAS PROBE MEASUREMENTS

**Geosyntec**  
consultants

engineers | scientists | innovators  
10875 Ranch Bernardo Road, Suite 200  
San Diego, Ca. 92127  
858.674.6559 fax 858.674.6586

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny  
 Field Personnel: T. H. D. S. C. L. G.  
 Tracer Gas: He

Probe # PVP-1A Lamp: 10.6 / 11.7 eV  
 PID Model # NA  
 PID Serial # NA  
 Landtech GEM 2000 Landfill Gas Meter Serial # B7160  
 Helium detector (model and serial number) RG133  
 Air Temperature Atm. Pressure (in Hg)

|                           |   |      |      |  |   |      |      |
|---------------------------|---|------|------|--|---|------|------|
| Field tubing blank (ppmv) | - | Time | 9:50 | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 9:50 |
|---------------------------|---|------|------|--|---|------|------|

|                    |                                  |  |                                |                                |  |
|--------------------|----------------------------------|--|--------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass | <input type="checkbox"/> Other | 1 Casing Volume  |
| Surface thickness: | in/cm                            | <input type="checkbox"/> unknown             |                                |                                | <input type="checkbox"/> Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
| /                            | 0.2             | /                                      |
| NA                           | 0.5             | NA                                     |
| /                            | 1               | /                                      |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 9:50       | 9:59     | 9                  | 3              | .167             | 1             | 0.5                                    | 0       | 0.5     | 20.7   | 40             | 80  | 1.0    | -                  |
| 10:04      | 10:12    | 8                  | 3              | .167             | 1             | 0.5                                    | 0       | 0.7     | 20.5   | 40             | 80  | 1.0    | -                  |
| 10:1630    | 10:34    | 4                  | 3              | .167             | .5            | 0.5                                    | 0       | 0.4     | 20.8   | 40             | 80  | 1.0    | -                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        | 78.8 Bal.          |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        | 78.8 Bal.          |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        | 78.9 Bal.          |

| Time  | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|-------|----------|-----------|-------------------|------------------------|----------------------|
| 10:19 | PVP 1A   | PVP 1A    | 33407             | 29.28                  | 4.12                 |
|       |          |           |                   |                        |                      |

Comments Completed Sample @ 10:27

## SOIL GAS PROBE MEASUREMENTS

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10875 Ranch Bernardo Road, Suite 200  
San Diego, Ca. 92127  
858.674.6559 fax 858.674.6586

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny  
 Field Personnel: Dave Skippin Chris Lieder  
 Tracer Gas: He

Probe # PVP - 2A Lamp: 10.6 / 11.7 eV  
 PID Model # NA  
 PID Serial # NA  
 Landtech GEM 2000 Landfill Gas Meter Serial # B7160  
 Helium detector (model and serial number) B6133  
 Air Temperature Atm. Pressure (in Hg)

|                           |   |      |       |  |   |      |       |
|---------------------------|---|------|-------|--|---|------|-------|
| Field tubing blank (ppmv) | — | Time | 10:58 | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 10:57 |
|---------------------------|---|------|-------|--|---|------|-------|

| Start of Pneumatic Testing: |                 |  |
|-----------------------------|-----------------|--|
| Elapsed Time (min.)         | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                             | 0.2             |  |
| NR                          | 0.5             | NR                                     |
|                             | 1               | NR                                     |

|                    |                                  |  |                                  |                                |  |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume  |
| Surface thickness: | in/cm                            |  | <input type="checkbox"/> unknown |                                | <input type="checkbox"/> Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 10:58      | 11:05    | 7                  | 3              | .167             | 1             | 1                                      | 0       | 1.3     | 20.3   | 40             | 80  | <1.0   | —                  |
| 11:07      | 11:13    | 6                  | 3              | .167             | 1             | 1                                      | 0       | 1.2     | 20.2   | 40             | 80  | <1.0   | —                  |
| 11:24      | 11:27    | 3                  | 3              | .167             | 0.5           | 1                                      | 0       | 0.9     | 20.1   | 40             | 80  | <1.0   | —                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time  | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|-------|----------|-----------|-------------------|------------------------|----------------------|
| 11:15 | PVP - 2A | PVP - 2A  | 2139              | -29.37                 |                      |
|       |          |           |                   |                        |                      |

|          |                          |
|----------|--------------------------|
| Comments | Completed Sample @ 11:23 |
|----------|--------------------------|

78.6 Bal,  
78.7 Bal,  
79.0 B-1

## SOIL GAS PROBE MEASUREMENTS

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10875 Ranch Bernardo Road, Suite 200  
San Diego, Ca. 92127  
858.674.6559 fax 858.674.6586

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny  
 Field Personnel: Dave Stegeman Chris Riedel  
 Tracer Gas: He

Probe #: PVP-3A  
 PID Model #: NA  
 PID Serial #: NA  
 Landtech GEM 2000 Landfill Gas Meter Serial #: B6133  
 Helium detector (model and serial number) B7160  
 Air Temperature \_\_\_\_\_ Atm. Pressure \_\_\_\_\_ (in Hg)

|                           |    |      |    |  |   |      |       |
|---------------------------|----|------|----|--|---|------|-------|
| Field tubing blank (ppmv) | NA | Time | NA | Initial Pressure/Vacuum (prior to pumping) | 3 | Time | 12:55 |
|---------------------------|----|------|----|--|---|------|-------|

|                    |                                  |  |                                |                                |  |
|--------------------|----------------------------------|--|--------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass | <input type="checkbox"/> Other | 1 Casing Volume  |
| Surface thickness: | _____ in/cm                      | <input type="checkbox"/> unknown             |                                |                                | <input type="checkbox"/> Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                              | 0.2             |  |
| ✓ NR                         | 0.5             | NR                                     |
|                              | 1               |  |
|                              |                 |  |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 12:58      | -        | -                  | 3              | 167              | -             | B7160                                  | -       | -       | -      | 40             | 80  | -      | -                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|------|----------|-----------|-------------------|------------------------|----------------------|
| *    | *        | *         | *                 | -19.38                 | *                    |
|      |          |           |                   |                        |                      |
|      |          |           |                   |                        |                      |
|      |          |           |                   |                        |                      |

|   |
|---|
| Comments: * No sample - well head vacuum >100 in H <sub>2</sub> O |
|---|

**SOIL GAS PROBE MEASUREMENTS**

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: *Sunny*  
 Field Personnel: *Dave Skipper Chris Lieder*  
 Tracer Gas: He

Probe #: *PVP-4A* Lamp: 10.6 / 11.7 eV  
 PID Model #: *NA*  
 PID Serial #: *NA*  
 Landtech GEM 2000 Landfill Gas Meter Serial #: *87160*  
 Helium detector (model and serial number) *P76133*  
 Air Temperature \_\_\_\_\_ Atm. Pressure \_\_\_\_\_ (in Hg)

|                           |           |      |           |  |              |      |              |
|---------------------------|-----------|------|-----------|--|--------------|------|--------------|
| Field tubing blank (ppmv) | <i>NA</i> | Time | <i>NA</i> | Initial Pressure/Vacuum (prior to pumping) | <i>0.015</i> | Time | <i>13:24</i> |
|---------------------------|-----------|------|-----------|--|--------------|------|--------------|

|                    |                                  |  |                                  |                                |  |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume  |
| Surface thickness: | <i>6</i> in cm                   |  | <input type="checkbox"/> unknown |                                | <input type="checkbox"/> Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                              | 0.2             |  |
| <i>NA</i>                    | 0.5             | <i>NA</i>                              |
| /                            | 1               | /                                      |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 13:32      | 13:39    | 7                  | 3              | 0.167            | 1             | 0.15                                   | 0       | 1.0     | 20.4   | 40             | 80  | 0      | —                  |
| 13:41      | 13:56    | 15                 | —              | 0.167            | —             | 0.16                                   | —       | —       | —      | 40             | 80  | —      | —                  |
| 13:56      | 14:02    | 6                  | 3              | 0.167            | 0.75          | 0.116                                  | 0       | 0.9     | 20.7   | 40             | 80  | 0      | —                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time  | Location      | Sample ID     | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|-------|---------------|---------------|-------------------|------------------------|----------------------|
| 13:41 | <i>PVP-4A</i> | <i>PVP-4A</i> | <i>34636</i>      | <i>-29.42</i>          | <i>-3.16</i>         |
| 13:41 | <i>PVP-4R</i> | <i>PVP-4C</i> | <i>34162</i>      | <i>-29.38</i>          | <i>-2.90</i>         |

Comments

## SOIL GAS PROBE MEASUREMENTS

**Geosyntec**  
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engineers | scientists | innovators  
10875 Ranch Bernardo Road, Suite 200  
San Diego, Ca. 92127  
858.674.6559 fax 858.674.6586

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny  
 Field Personnel: Chris Zieder Dave Sidipon  
 Tracer Gas: He

Probe #: PVP-5  
 PID Model #: NA  
 PID Serial #: NA  
 Landtech GEM 2000 Landfill Gas Meter Serial #  
 Helium detector (model and serial number)  
 Air Temperature \_\_\_\_\_ Atm. Pressure \_\_\_\_\_ (in Hg)

|                           |    |      |    |  |   |      |       |
|---------------------------|----|------|----|--|---|------|-------|
| Field tubing blank (ppmv) | NA | Time | NA | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 14:34 |
|---------------------------|----|------|----|--|---|------|-------|

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
| NR                           | 0.2             | NA                                     |
| NR                           | 0.5             | NA                                     |
| /                            | 1               | /                                      |

|                    |                                  |  |                                  |                                |  |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume  |
| Surface thickness: | 6                                | in/cm  | <input type="checkbox"/> unknown |                                | <input type="checkbox"/> Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 14:37      | 14:43    | 6                  | 3              | 0.167            | 1             | 0.06                                   | 0       | 0.3     | 21.8   | 40             | 80  | 0      | —                  |
| 14:46      | 14:53    | 7                  | —              | 0.167            | —             | 0.06                                   | —       | —       | —      | 40             | 80  | —      | —                  |
| 14:55      | 14:59    | 4                  | 3              | 0.167            | 0.5           | 0.06                                   | 0       | 0.3     | 21.9   | 40             | 80  | 0      | —                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time  | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|-------|----------|-----------|-------------------|------------------------|----------------------|
| 14:46 | PVP-5    | PVP-5     | 30828             | -29.30                 | -5.19                |
|       |          |           |                   |                        |                      |

|          |
|----------|
| Comments |
|----------|

77.9 Bal,  
SAMple  
77.8 Bal,

**SOIL GAS PROBE MEASUREMENTS**

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny 64°  
 Field Personnel: S. Aadnes, C. Gale  
 Tracer Gas: He

Probe #: VW-4A Lamp: 10.6 / 11.7 eV  
 PID Model #: -  
 PID Serial #: -  
 Landtech GEM 2000 Landfill Gas Meter Serial #: Gem 2000 R8357  
 Helium detector (model and serial number) Dielectric # RGA131  
 Air Temperature 64 Atm. Pressure - (in Hg)

| Field tubing blank (ppmv) | N.A. | Time | N.A. | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 1023 |
|---------------------------|------|------|------|--|---|------|------|
|---------------------------|------|------|------|--|---|------|------|

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                              | 0.2             |  |
|                              | 0.5             |  |
|                              | N.A.            |  |

|                    |                                  |  |                                  |                                |  |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|--|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume                          |
| Surface thickness: | <u>6"</u>                        | <u>0</u> /cm                                 | <input type="checkbox"/> unknown |                                | <input type="checkbox"/> Sub-slab <0.1 L |

(ie. asphalt or concrete surface)

Soil gas probe (L)

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 1025       | 1032     | 7                  | 3              | .167             | 1             | .40                                    | 0       | 7.0     | 13.5   | 30             | 65  | <17.   | 79.5               |
| 1035       | 1042     | 7                  | 1              | .167             | 1             | .55                                    | -       | -       | -      | 30             | 70  | -      | -                  |
| 1043       | 1046     | 3                  | .3             | .167             | .3            | .50                                    | -       | -       | -      | 30             | 60  | <17.   | -                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|------|----------|-----------|-------------------|------------------------|----------------------|
| 1035 | VW-4A    | VW-4A     | 34647             | -28.90                 | -3.98                |
|      |          |           |                   |                        |                      |

|          |             |
|----------|-------------|
| Comments | Vacuum ✓ ok |
|----------|-------------|

Balance

**SOIL GAS PROBE MEASUREMENTS**

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny 64°  
 Field Personnel: S. Andres, C. Gale  
 Tracer Gas: He

Probe #: VW-3A  
 PID Model #: NA  
 PID Serial #: NA  
 Landtech GEM 2000 Landfill Gas Meter Serial #: Gen 2000 R8357  
 Helium detector (model and serial number) Dielectric # R6131  
 Air Temperature 64° Atm. Pressure N.A. (in Hg)

| Field tubing blank (ppmv) | NA | Time | N.A. | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 09:24 |
|---------------------------|----|------|------|--|---|------|-------|
|---------------------------|----|------|------|--|---|------|-------|

|                    |                                  |  |                                  |                                   |                   |                    |
|--------------------|----------------------------------|--|----------------------------------|-----------------------------------|-------------------|--------------------|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other    | 1 Casing Volume   |                    |
| Surface thickness: | 6"                               | in/cm  | <input type="checkbox"/> unknown | (ie. asphalt or concrete surface) | □ Sub-slab <0.1 L | Soil gas probe (L) |

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                              | 0.2             |  |
|                              | 0.5             |  |
|                              | NA 1            |  |
|                              |                 |  |
|                              |                 |  |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 0926       | 0933     | 7                  | 3              | .167             | 1             | -06                                    | 0.0     | 4.6     | 17.02  | 30             | 64  | <1%    | 78.4               |
| 0936       | 0943     | 7                  | 1              | .167             | 1             | -095                                   | -       | -       | -      |                |     | -      | —                  |
| 0944       | 0947     | 3                  | 3              | .167             | .3            | .05                                    | -       | -       | -      | 30             | 70  | <1%    | —                  |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |
|            |          |                    |                |                  |               |  |         |         |        |                |     |        |                    |

| Time | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|------|----------|-----------|-------------------|------------------------|----------------------|
| 0936 | VW-3A    | VW-3A     | 31756             | -29.5                  | -2.88                |
|      |          |           |                   |                        |                      |
|      |          |           |                   |                        |                      |

|          |            |
|----------|------------|
| Comments | vacuum vol |
|----------|------------|

**SOIL GAS PROBE MEASUREMENTS**

Project Name: Poway Landfill  
 Project Number: SC0233  
 Phase Number: 16-01  
 Date: 1/27/2009 Weather: Sunny 64  
 Field Personnel: S. Andrus, C. Gale  
 Tracer Gas: He

Probe #: VW-5A Lamp: 10.6 / 11.7 eV  
 PID Model #: —  
 PID Serial #: —  
 Landtech GEM 2000 Landfill Gas Meter Serial #: Gem 2000 # 28357  
 Helium detector (model and serial number) Detectr: C # Z6131  
 Air Temperature: 64 Atm. Pressure: — (in Hg)

| Field tubing blank (ppmv) | N.A. | Time | N.A. | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 1304 |
|---------------------------|------|------|------|--|---|------|------|
|---------------------------|------|------|------|--|---|------|------|

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
| 0.2                          | 0.5             | 1                                      |
| 0.5                          | 1               | N.A.                                   |
| 1                            |                 |  |

|                    |                                  |  |                                  |                                |   |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|---|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume                         |
| Surface thickness: | 6"                               | in cm  | <input type="checkbox"/> unknown |                                | □ Sub-slab <0.1 L<br>Soil gas probe (L) |

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 1305       | 1312     | 7                  | 3              | .167             | 1             | 1.1                                    | 0       | 2.3     | 17.6   | 30             | 60  | <1%    | 80.1               |
| 1316       | 1321     | 6                  | 1              | .167             | 1             | 1.2                                    | —       | —       | —      | 30             | 72  | —      | —                  |
| 1322       | 1325     | 3                  | .3             | .167             | .3            | 1.2                                    | —       | —       | —      | 30             | 60  | <1%    | —                  |

| Time | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|------|----------|-----------|-------------------|------------------------|----------------------|
| 1316 | VW-5A    | VW-5A     | 34615             | -29.38                 | -407                 |
| 1316 | VW-5A    | QCFB QCPB | 70641110 1366     | -29.00                 | -255                 |

|          |             |
|----------|-------------|
| Comments | vacuum ✓ ok |
|----------|-------------|

## SOIL GAS PROBE MEASUREMENTS

**Geosyntec** ▶  
consultants

engineers | scientists | innovators  
10875 Ranch Bernardo Road, Suite 200  
San Diego, Ca. 92127  
858.674.6559 fax 858.674.6586

Project Name: Poway Landfill  
Project Number: SC0233  
Phase Number: 16-01  
Date: 1/27/2009 Weather: Sunny 64°  
Field Personnel: S. Adnes, C. Gale  
Tracer Gas: He

Probe # SW-1A VW 8A Lamp: 10.6 / 11.7 eV  
PID Model #  
PID Serial #  
Landtech GEM 2000 Landfill Gas Meter Serial # Gem 2000 # R8357  
Helium detector (model and serial number) Deltac # R6131  
Air Temperature 64° Atm. Pressure — (in Hg)

| Field tubing blank (ppmv) | N.A. | Time | N.A. | Initial Pressure/Vacuum (prior to pumping) | 0 | Time | 1410 |
|---------------------------|------|------|------|--|---|------|------|
|---------------------------|------|------|------|--|---|------|------|

| Start of Pneumatic Testing : |                 |  |
|------------------------------|-----------------|--|
| Elapsed Time (min.)          | Flow Rate (LPM) | Well Head Vacuum (in H <sub>2</sub> O) |
|                              | 0.2             |  |
|                              | 0.5             |  |
|                              | 1               |  |
|                              | NA              |  |

|                    |                                  |  |                                  |                                |                   |
|--------------------|----------------------------------|--|----------------------------------|--------------------------------|-------------------|
| Subsurface type    | <input type="checkbox"/> Asphalt | <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Grass   | <input type="checkbox"/> Other | 1 Casing Volume   |
| Surface thickness: | 6 "                              | 10 cm  | <input type="checkbox"/> unknown |                                | □ Sub-slab <0.1 L |

(ie. asphalt or concrete surface)

| Start Time | End Time | Elapsed Time (min) | Bag Volume (L) | Purge Rate (LPM) | Total Vol (L) | Well Head Vacuum (in H <sub>2</sub> O) | CH4 (%) | CO2 (%) | O2 (%) | Tracer Gas (%) |     |        | VOCs by PID (ppmv) |
|------------|----------|--------------------|----------------|------------------|---------------|--|---------|---------|--------|----------------|-----|--------|--------------------|
|            |          |                    |                |                  |               |  |         |         |        | min            | max | Sample |                    |
| 1413       | 1420     | 7                  | 3              | .167             | 1             | .07                                    | 0       | 4.4     | 17.02  | 30             | 60  | <1%    | 78.6               |
| 1422       | 1431     | 9                  | 1              | .167             | 1             | .09                                    | -       | -       | -      | 30             | 63  | -      | -                  |
| 1432       | 1436     | 4                  | 3              | .167             | .3            | .09                                    | -       | -       | -      | 30             | 60  | <1.0   |                    |

| Time | Location | Sample ID | Summa Canister ID | Initial Vacuum (in Hg) | Final Vacuum (in Hg) |
|------|----------|-----------|-------------------|------------------------|----------------------|
| 1422 | VW 8A    | VW 8A     | 2197              | -29.38                 | -2.98                |
|      |          |           |                   |                        |                      |

|          |            |
|----------|------------|
| Comments | Vacuum vol |
|----------|------------|

Balance



## CHAIN-OF-CUSTODY RECORD

Project Manager CHRIS GALE  
 Collected by: (Print and Sign) D SHIMON *C. Gale Ette*  
 Company GEO SYNTETIC Email c.gale@gosyntetic.com  
 Address 10675 RANCHO BERNARDO RD City SAN DIEGO State CA Zip 92177  
 Phone 858-674-6559 Fax -

### Sample Transportation Notice

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 (916) 985-1000 FAX (916) 985-1020

Page 1 of 2

|                              |  |                                 |
|------------------------------|--|---------------------------------|
| Project Info:                | Turn Around Time:                          | Lab Use Only<br>Pressurized by: |
| P.O. #                       | <input checked="" type="checkbox"/> Normal | Date:                           |
| Project # <u>SC0233-16-2</u> | <input type="checkbox"/> Rush              | Pressurization Gas:             |
| Project Name <u>Poway</u>    | specify                                    | N <sub>2</sub> He               |

| Lab I.D. | Field Sample I.D. (Location) | Can # | Date of Collection | Time of Collection | Analyses Requested | Canister Pressure/Vacuum |       |         |             |
|----------|------------------------------|-------|--------------------|--------------------|--------------------|--------------------------|-------|---------|-------------|
|          |                              |       |                    |                    |                    | Initial                  | Final | Receipt | Final (psi) |
|          | PVP-1A                       | 33407 | 11/27/09           | 10:17              | TD 15 + TICS       | 29.28                    | 4.12  |         |             |
|          | PVP-2A                       | 2139  |                    | 11:15              | TD 15 +            | 29.37                    | 3.90  |         |             |
|          | PVP-4A                       | 34636 |                    | 13:41              | TD 15 +            | 29.48                    | 3.16  |         |             |
|          | PVP-4C                       | 34162 |                    | 13:41              | TD 15 +            | 29.38                    | 2.90  |         |             |
|          | PVP-5                        | 30878 |                    | 14:46              | TD 15 +            | 29.30                    | 5.19  |         |             |
|          | VW-3A                        | 31756 |                    | 9:36               | TD 15 +            | 29.52                    | 2.88  |         |             |
|          | VW-4A                        | 34647 |                    | 10:35              | TD 15 +            | 28.90                    | 3.98  |         |             |
|          | VW-5A                        | 34615 |                    | 13:16              | TD 15 +            | 29.38                    | 4.07  |         |             |
|          | QCFB                         | 1366  |                    | 13:16              | TD 15 +            | 29.00                    | 2.55  |         |             |
|          | VW-8A                        | 2197  |                    | 14:22              | TD 15 +            | 29.38                    | 2.98  |         |             |

|                              |           |                          |                |
|------------------------------|-----------|--------------------------|----------------|
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      |
| <i>[Signature]</i>           | 11/27/09  | <i>[Signature]</i>       | 11/27/09 16:00 |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      |
|                              |           |                          |                |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      |
|                              |           |                          |                |

Notes:  
*See K. VAN OADORN  
 For TICS*

| Lab Use Only | Shipper Name | Air Bill # | Temp (°C) | Condition | Custody Seals Intact?  | Work Order # |
|--------------|--------------|------------|-----------|-----------|--|--------------|
|              |              |            |           |           | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None |              |



## CHAIN-OF-CUSTODY RECORD

Project Manager PA 61  
 Collected by: (Print and Sign) PA 61  
 Company SEI Email \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_

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Page 1 of 2

|                    |                 |  |  |
|--------------------|-----------------|--|--|
| Project Info:      |                 | Turn Around Time:<br><input checked="" type="checkbox"/> Normal<br><input type="checkbox"/> Rush | Lab Use Only<br>Pressurized by:<br>Date:<br>Pressurization Gas:<br>specify _____ |
| P.O. # _____       | Project # _____ |  |  |
| Project Name _____ |                 | N <sub>2</sub>   | He   |

| Lab I.D. | Field Sample I.D. (Location) | Can # | Date of Collection | Time of Collection | Analyses Requested | Canister Pressure/Vacuum |       |         |             |
|----------|------------------------------|-------|--------------------|--------------------|--------------------|--------------------------|-------|---------|-------------|
|          |                              |       |                    |                    |                    | Initial                  | Final | Receipt | Final (psi) |
|          | PUDCTAB                      | 34642 | 11/27/09           | 7:30               | T215 + T15         | 215                      | -     |         |             |
|          | PVP 2A                       | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | PVP 4A                       | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | PVP - 4C                     | 34642 |                    |                    |                    | 2125                     | 2125  |         |             |
|          | PVP - 5                      | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | VPU - 2A                     | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | VPU - 4A                     | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | VPU - 5A                     | 34642 |                    |                    |                    | 2125                     | 2125  |         |             |
|          | OCFP                         | 1264  |                    |                    |                    | 2125                     | 2125  |         |             |
|          | VPU - SA                     | 2125  |                    |                    |                    | 2125                     | 2125  |         |             |

|                              |           |                          |                |                                  |
|------------------------------|-----------|--------------------------|----------------|----------------------------------|
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      | Notes:<br>Fader = 3962-8636 1035 |
| <u>PA</u>                    | 11/27/09  | <u>Fader</u>             | 11/27/09 /6:27 |                                  |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      |                                  |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time      |                                  |

| Lab Use Only | Shipper Name | Air Bill # | Temp (°C) | Condition | Custody Seals Intact?        | Work Order #                |                               |
|--------------|--------------|------------|-----------|-----------|------------------------------|-----------------------------|-------------------------------|
|              |              |            |           |           | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> None |
|              |              |            |           |           |                              |                             |                               |

## **ATTACHMENT E-2**

**Soil Vapor Laboratory  
Analytical Certificates**



---

AN ENVIRONMENTAL ANALYTICAL LABORATORY

2/2/2009

Mr. Chris Gale  
GeoSyntec Consultants  
10875 Rancho Bernardo Road  
Suite 200  
San Diego CA 92127

Project Name: Poway  
Project #: SC0233-16-2

Dear Mr. Chris Gale

The following report includes the data for the above referenced project for sample(s) received on 1/28/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15/TICs are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

A handwritten signature in black ink that reads "Kyle Vagadori".

Kyle Vagadori  
Project Manager



AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 0901521

### Work Order Summary

|                        |   |                  |   |
|------------------------|---|------------------|---|
| <b>CLIENT:</b>         | Mr. Chris Gale<br>GeoSyntec Consultants<br>10875 Rancho Bernardo Road<br>Suite 200<br>San Diego, CA 92127 | <b>BILL TO:</b>  | Mr. Chris Gale<br>GeoSyntec Consultants<br>10875 Rancho Bernardo Road<br>Suite 200<br>San Diego, CA 92127 |
| <b>PHONE:</b>          | 858-674-6559 X215   | <b>P.O. #</b>    |   |
| <b>FAX:</b>            | 858-674-6586  | <b>PROJECT #</b> | SC0233-16-2 Poway   |
| <b>DATE RECEIVED:</b>  | 01/28/2009  | <b>CONTACT:</b>  | Kyle Vagadori   |
| <b>DATE COMPLETED:</b> | 01/31/2009  |                  |   |

| <b><u>FRACTION #</u></b> | <b><u>NAME</u></b>   | <b><u>TEST</u></b>  | <b><u>RECEIPT VAC./PRES.</u></b> | <b><u>FINAL PRESSURE</u></b> |
|--------------------------|----------------------|---------------------|----------------------------------|------------------------------|
| 01A                      | PVP-1A               | Modified TO-15/TICs | 4.4 "Hg                          | 15 psi                       |
| 02A                      | PVP-2A               | Modified TO-15/TICs | 4.8 "Hg                          | 15 psi                       |
| 03A                      | PVP-4A               | Modified TO-15/TICs | 3.8 "Hg                          | 15 psi                       |
| 03AA                     | PVP-4A Lab Duplicate | Modified TO-15/TICs | 3.8 "Hg                          | 15 psi                       |
| 04A                      | PVP-4C               | Modified TO-15/TICs | 3.4 "Hg                          | 15 psi                       |
| 05A                      | PVP-5                | Modified TO-15/TICs | 5.0 "Hg                          | 15 psi                       |
| 06A                      | VW-3A                | Modified TO-15/TICs | 3.8 "Hg                          | 15 psi                       |
| 07A                      | VW-4A                | Modified TO-15/TICs | 4.8 "Hg                          | 15 psi                       |
| 08A                      | VW-5A                | Modified TO-15/TICs | 4.6 "Hg                          | 15 psi                       |
| 09A                      | QCFB                 | Modified TO-15/TICs | 3.4 "Hg                          | 15 psi                       |
| 10A                      | VW-8A                | Modified TO-15/TICs | 3.2 "Hg                          | 15 psi                       |
| 11A                      | QCTB                 | Modified TO-15/TICs | 29.0 "Hg                         | 15 psi                       |
| 12A                      | Lab Blank            | Modified TO-15/TICs | NA                               | NA                           |
| 13A                      | CCV                  | Modified TO-15/TICs | NA                               | NA                           |
| 14A                      | LCS                  | Modified TO-15/TICs | NA                               | NA                           |

CERTIFIED BY:

DATE: 02/02/09

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE  
Modified TO-15  
GeoSyntec Consultants  
Workorder# 0901521**

Eleven 1 Liter Summa Canister (100% Certified) samples were received on January 28, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <b>Requirement</b>      | <b>TO-15</b>               | <b>ATL Modifications</b>  |
|-------------------------|----------------------------|---|
| Daily CCV               | </= 30% Difference         | </= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.  |
| Sample collection media | Summa canister             | ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request  |
| Method Detection Limit  | Follow 40CFR Pt.136 App. B | The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases |

### **Receiving Notes**

There were no receiving discrepancies.

### **Analytical Notes**

Specific analytes that are requested by the client to be reported as tentatively identified compounds (TICs) are determined by searching for each compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra exists, then the TIC is reported as not detected. Please note that the laboratory has not evaluated the stability of any heretofore tentatively identified compound in the vapor phase or for efficiency of recovery through the analytical system.

### **Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).



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- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue



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## Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: PVP-1A**

**Lab ID#: 0901521-01A**

| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12                         | 1.2                  | 2.9              | 5.9                   | 14                |
| Ethanol                          | 4.7                  | 200              | 8.9                   | 380               |
| Freon 113                        | 1.2                  | 2.2              | 9.1                   | 17                |
| Acetone                          | 4.7                  | 23               | 11                    | 55                |
| 2-Propanol                       | 4.7                  | 5.6              | 12                    | 14                |
| Hexane                           | 1.2                  | 17               | 4.2                   | 59                |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | 23               | 3.5                   | 69                |
| Cyclohexane                      | 1.2                  | 1.5              | 4.1                   | 5.3               |
| 2,2,4-Trimethylpentane           | 1.2                  | 4.4              | 5.5                   | 20                |
| Benzene                          | 1.2                  | 6.8              | 3.8                   | 22                |
| Heptane                          | 1.2                  | 17               | 4.8                   | 71                |
| Toluene                          | 1.2                  | 28               | 4.5                   | 100               |
| Ethyl Benzene                    | 1.2                  | 13               | 5.1                   | 57                |
| m,p-Xylene                       | 1.2                  | 53               | 5.1                   | 230               |
| o-Xylene                         | 1.2                  | 22               | 5.1                   | 97                |
| Propylbenzene                    | 1.2                  | 3.9              | 5.8                   | 19                |
| 4-Ethyltoluene                   | 1.2                  | 19               | 5.8                   | 92                |
| 1,3,5-Trimethylbenzene           | 1.2                  | 19               | 5.8                   | 93                |
| 1,2,4-Trimethylbenzene           | 1.2                  | 20               | 5.8                   | 99                |

**Client Sample ID: PVP-2A**

**Lab ID#: 0901521-02A**

| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12                         | 1.2                  | 78               | 5.9                   | 390               |
| Freon 114                        | 1.2                  | 8.2              | 8.4                   | 57                |
| Ethanol                          | 4.8                  | 5.1              | 9.0                   | 9.6               |
| Freon 113                        | 1.2                  | 220              | 9.2                   | 1700              |
| Acetone                          | 4.8                  | 6.7              | 11                    | 16                |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | 2.1              | 3.5                   | 6.2               |
| Tetrachloroethene                | 1.2                  | 1.2              | 8.1                   | 8.3               |

**Client Sample ID: PVP-4A**

**Lab ID#: 0901521-03A**

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
|----------|----------------------|------------------|-----------------------|-------------------|



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## Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: PVP-4A**

**Lab ID#: 0901521-03A**

| Compound  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12  | 1.2                  | 30               | 5.7                   | 150               |
| Freon 114 | 1.2                  | 1.7              | 8.1                   | 12                |

**Client Sample ID: PVP-4A Lab Duplicate**

**Lab ID#: 0901521-03AA**

| Compound  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12  | 1.6                  | 34               | 8.2                   | 170               |
| Freon 114 | 1.6                  | 1.8              | 12                    | 13                |

**Client Sample ID: PVP-4C**

**Lab ID#: 0901521-04A**

| Compound   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12   | 1.1                  | 29               | 5.6                   | 140               |
| Freon 114  | 1.1                  | 1.6              | 8.0                   | 12                |
| Freon 11   | 1.1                  | 1.4              | 6.4                   | 8.0               |
| Acetone    | 4.6                  | 8.0              | 11                    | 19                |
| Chloroform | 1.1                  | 1.2              | 5.6                   | 6.1               |

**Client Sample ID: PVP-5**

**Lab ID#: 0901521-05A**

| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Ethanol                          | 4.8                  | 14               | 9.1                   | 27                |
| Acetone                          | 4.8                  | 9.0              | 11                    | 21                |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | 1.7              | 3.6                   | 5.0               |
| Toluene                          | 1.2                  | 11               | 4.6                   | 42                |

**Client Sample ID: VW-3A**

**Lab ID#: 0901521-06A**

No Detections Were Found.



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## Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: VW-4A**

**Lab ID#: 0901521-07A**

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 1.2                  | 2.5              | 5.9                   | 12                |
| Ethanol           | 4.8                  | 6.6              | 9.0                   | 12                |
| Acetone           | 4.8                  | 12               | 11                    | 28                |
| Toluene           | 1.2                  | 1.9              | 4.5                   | 7.3               |
| Tetrachloroethene | 1.2                  | 15               | 8.1                   | 100               |
| m,p-Xylene        | 1.2                  | 3.2              | 5.2                   | 14                |
| o-Xylene          | 1.2                  | 1.6              | 5.2                   | 6.9               |

**Client Sample ID: VW-5A**

**Lab ID#: 0901521-08A**

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 1.2                  | 3.4              | 5.9                   | 17                |
| Freon 113         | 1.2                  | 2.3              | 9.2                   | 17                |
| Acetone           | 4.8                  | 13               | 11                    | 32                |
| Hexane            | 1.2                  | 1.5              | 4.2                   | 5.3               |
| Benzene           | 1.2                  | 4.4              | 3.8                   | 14                |
| Heptane           | 1.2                  | 1.2              | 4.9                   | 5.1               |
| Tetrachloroethene | 1.2                  | 3.9              | 8.1                   | 26                |
| Ethyl Benzene     | 1.2                  | 3.1              | 5.2                   | 13                |

**Client Sample ID: QCFB**

**Lab ID#: 0901521-09A**

No Detections Were Found.

**Client Sample ID: VW-8A**

**Lab ID#: 0901521-10A**

| Compound              | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-----------------------|----------------------|------------------|-----------------------|-------------------|
| 1,1,1-Trichloroethane | 1.1                  | 2.4              | 6.2                   | 13                |
| Trichloroethene       | 1.1                  | 1.2              | 6.1                   | 6.3               |
| Toluene               | 1.1                  | 1.8              | 4.2                   | 6.6               |
| Tetrachloroethene     | 1.1                  | 1.3              | 7.7                   | 8.6               |



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**Summary of Detected Compounds  
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: QCTB**

**Lab ID#: 0901521-11A**

No Detections Were Found.



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Client Sample ID: PVP-1A

Lab ID#: 0901521-01A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                       | x012906              |                  | Date of Collection:   | 1/27/09           |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Dil. Factor:                     | 2.37                 |                  | Date of Analysis:     | 1/29/09 12:32 PM  |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | 2.9              | 5.9                   | 14                |
| Freon 114                        | 1.2                  | Not Detected     | 8.3                   | Not Detected      |
| Chloromethane                    | 4.7                  | Not Detected     | 9.8                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected     | 3.0                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected     | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected     | 4.6                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected     | 3.1                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected     | 6.6                   | Not Detected      |
| Ethanol                          | 4.7                  | 200              | 8.9                   | 380               |
| Freon 113                        | 1.2                  | 2.2              | 9.1                   | 17                |
| 1,1-Dichloroethene               | 1.2                  | Not Detected     | 4.7                   | Not Detected      |
| Acetone                          | 4.7                  | 23               | 11                    | 55                |
| 2-Propanol                       | 4.7                  | 5.6              | 12                    | 14                |
| Carbon Disulfide                 | 1.2                  | Not Detected     | 3.7                   | Not Detected      |
| 3-Chloropropene                  | 4.7                  | Not Detected     | 15                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected     | 4.1                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected     | 4.3                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected     | 4.7                   | Not Detected      |
| Hexane                           | 1.2                  | 17               | 4.2                   | 59                |
| 1,1-Dichloroethane               | 1.2                  | Not Detected     | 4.8                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | 23               | 3.5                   | 69                |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected     | 4.7                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected     | 3.5                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected     | 5.8                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected     | 6.5                   | Not Detected      |
| Cyclohexane                      | 1.2                  | 1.5              | 4.1                   | 5.3               |
| Carbon Tetrachloride             | 1.2                  | Not Detected     | 7.4                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | 4.4              | 5.5                   | 20                |
| Benzene                          | 1.2                  | 6.8              | 3.8                   | 22                |
| 1,2-Dichloroethane               | 1.2                  | Not Detected     | 4.8                   | Not Detected      |
| Heptane                          | 1.2                  | 17               | 4.8                   | 71                |
| Trichloroethene                  | 1.2                  | Not Detected     | 6.4                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected     | 5.5                   | Not Detected      |
| 1,4-Dioxane                      | 4.7                  | Not Detected     | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected     | 7.9                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected     | 5.4                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected     | 4.8                   | Not Detected      |
| Toluene                          | 1.2                  | 28               | 4.5                   | 100               |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected     | 5.4                   | Not Detected      |



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Client Sample ID: PVP-1A

Lab ID#: 0901521-01A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012906              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.37                 | Date of Analysis:   | 1/29/09 12:32 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.5                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | Not Detected        | 8.0                   | Not Detected      |
| 2-Hexanone                | 4.7                  | Not Detected        | 19                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 10                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 9.1                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.4                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | 13                  | 5.1                   | 57                |
| m,p-Xylene                | 1.2                  | 53                  | 5.1                   | 230               |
| o-Xylene                  | 1.2                  | 22                  | 5.1                   | 97                |
| Styrene                   | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.8                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 8.1                   | Not Detected      |
| Propylbenzene             | 1.2                  | 3.9                 | 5.8                   | 19                |
| 4-Ethyltoluene            | 1.2                  | 19                  | 5.8                   | 92                |
| 1,3,5-Trimethylbenzene    | 1.2                  | 19                  | 5.8                   | 93                |
| 1,2,4-Trimethylbenzene    | 1.2                  | 20                  | 5.8                   | 99                |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 7.1                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 7.1                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.1                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 7.1                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.7                  | Not Detected        | 35                    | Not Detected      |
| Hexachlorobutadiene       | 4.7                  | Not Detected        | 50                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 102       | 70-130           |
| 1,2-Dichloroethane-d4 | 124       | 70-130           |
| 4-Bromofluorobenzene  | 115       | 70-130           |



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Client Sample ID: PVP-2A

Lab ID#: 0901521-02A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012907              | <b>Date of Collection:</b> 1/27/09        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 2.40                 | <b>Date of Analysis:</b> 1/29/09 01:10 PM |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | 78  | 5.9                   | 390               |
| Freon 114                        | 1.2                  | 8.2                                       | 8.4                   | 57                |
| Chloromethane                    | 4.8                  | Not Detected                              | 9.9                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected                              | 3.1                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected                              | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected                              | 4.7                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected                              | 3.2                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected                              | 6.7                   | Not Detected      |
| Ethanol                          | 4.8                  | 5.1                                       | 9.0                   | 9.6               |
| Freon 113                        | 1.2                  | 220                                       | 9.2                   | 1700              |
| 1,1-Dichloroethene               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Acetone                          | 4.8                  | 6.7                                       | 11                    | 16                |
| 2-Propanol                       | 4.8                  | Not Detected                              | 12                    | Not Detected      |
| Carbon Disulfide                 | 1.2                  | Not Detected                              | 3.7                   | Not Detected      |
| 3-Chloropropene                  | 4.8                  | Not Detected                              | 15                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected                              | 4.2                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected                              | 4.3                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Hexane                           | 1.2                  | Not Detected                              | 4.2                   | Not Detected      |
| 1,1-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | 2.1                                       | 3.5                   | 6.2               |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected                              | 3.5                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected                              | 5.8                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected                              | 6.5                   | Not Detected      |
| Cyclohexane                      | 1.2                  | Not Detected                              | 4.1                   | Not Detected      |
| Carbon Tetrachloride             | 1.2                  | Not Detected                              | 7.6                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | Not Detected                              | 5.6                   | Not Detected      |
| Benzene                          | 1.2                  | Not Detected                              | 3.8                   | Not Detected      |
| 1,2-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Heptane                          | 1.2                  | Not Detected                              | 4.9                   | Not Detected      |
| Trichloroethene                  | 1.2                  | Not Detected                              | 6.4                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected                              | 5.5                   | Not Detected      |
| 1,4-Dioxane                      | 4.8                  | Not Detected                              | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected                              | 8.0                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected                              | 4.9                   | Not Detected      |
| Toluene                          | 1.2                  | Not Detected                              | 4.5                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |



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Client Sample ID: PVP-2A

Lab ID#: 0901521-02A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012907              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.40                 | Date of Analysis:   | 1/29/09 01:10 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.5                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | 1.2                 | 8.1                   | 8.3               |
| 2-Hexanone                | 4.8                  | Not Detected        | 20                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 10                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 9.2                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.5                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| m,p-Xylene                | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| o-Xylene                  | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| Styrene                   | 1.2                  | Not Detected        | 5.1                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 8.2                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.2                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.8                  | Not Detected        | 36                    | Not Detected      |
| Hexachlorobutadiene       | 4.8                  | Not Detected        | 51                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 101       | 70-130           |
| 1,2-Dichloroethane-d4 | 122       | 70-130           |
| 4-Bromofluorobenzene  | 115       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-4A

Lab ID#: 0901521-03A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| File Name:                       | x012910              | Date of Collection: 1/27/09        |                       |                   |
|----------------------------------|----------------------|------------------------------------|-----------------------|-------------------|
| Dil. Factor:                     | 2.31                 | Date of Analysis: 1/29/09 03:24 PM |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                   | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | 30                                 | 5.7                   | 150               |
| Freon 114                        | 1.2                  | 1.7                                | 8.1                   | 12                |
| Chloromethane                    | 4.6                  | Not Detected                       | 9.5                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected                       | 3.0                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected                       | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected                       | 4.5                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected                       | 3.0                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected                       | 6.5                   | Not Detected      |
| Ethanol                          | 4.6                  | Not Detected                       | 8.7                   | Not Detected      |
| Freon 113                        | 1.2                  | Not Detected                       | 8.8                   | Not Detected      |
| 1,1-Dichloroethene               | 1.2                  | Not Detected                       | 4.6                   | Not Detected      |
| Acetone                          | 4.6                  | Not Detected                       | 11                    | Not Detected      |
| 2-Propanol                       | 4.6                  | Not Detected                       | 11                    | Not Detected      |
| Carbon Disulfide                 | 1.2                  | Not Detected                       | 3.6                   | Not Detected      |
| 3-Chloropropene                  | 4.6                  | Not Detected                       | 14                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected                       | 4.0                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected                       | 4.2                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected                       | 4.6                   | Not Detected      |
| Hexane                           | 1.2                  | Not Detected                       | 4.1                   | Not Detected      |
| 1,1-Dichloroethane               | 1.2                  | Not Detected                       | 4.7                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | Not Detected                       | 3.4                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected                       | 4.6                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected                       | 3.4                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected                       | 5.6                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected                       | 6.3                   | Not Detected      |
| Cyclohexane                      | 1.2                  | Not Detected                       | 4.0                   | Not Detected      |
| Carbon Tetrachloride             | 1.2                  | Not Detected                       | 7.3                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | Not Detected                       | 5.4                   | Not Detected      |
| Benzene                          | 1.2                  | Not Detected                       | 3.7                   | Not Detected      |
| 1,2-Dichloroethane               | 1.2                  | Not Detected                       | 4.7                   | Not Detected      |
| Heptane                          | 1.2                  | Not Detected                       | 4.7                   | Not Detected      |
| Trichloroethene                  | 1.2                  | Not Detected                       | 6.2                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected                       | 5.3                   | Not Detected      |
| 1,4-Dioxane                      | 4.6                  | Not Detected                       | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected                       | 7.7                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected                       | 5.2                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected                       | 4.7                   | Not Detected      |
| Toluene                          | 1.2                  | Not Detected                       | 4.4                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected                       | 5.2                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-4A

Lab ID#: 0901521-03A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012910              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.31                 | Date of Analysis:   | 1/29/09 03:24 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.3                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | Not Detected        | 7.8                   | Not Detected      |
| 2-Hexanone                | 4.6                  | Not Detected        | 19                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 9.8                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 8.9                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.3                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| m,p-Xylene                | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| o-Xylene                  | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| Styrene                   | 1.2                  | Not Detected        | 4.9                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 7.9                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.0                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.6                  | Not Detected        | 34                    | Not Detected      |
| Hexachlorobutadiene       | 4.6                  | Not Detected        | 49                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 103       | 70-130           |
| 1,2-Dichloroethane-d4 | 123       | 70-130           |
| 4-Bromofluorobenzene  | 115       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: PVP-4A Lab Duplicate**

**Lab ID#: 0901521-03AA**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012908              | <b>Date of Collection: 1/27/09</b>        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 3.30                 | <b>Date of Analysis: 1/29/09 02:10 PM</b> |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.6                  | 34  | 8.2                   | 170               |
| Freon 114                        | 1.6                  | 1.8                                       | 12                    | 13                |
| Chloromethane                    | 6.6                  | Not Detected                              | 14                    | Not Detected      |
| Vinyl Chloride                   | 1.6                  | Not Detected                              | 4.2                   | Not Detected      |
| 1,3-Butadiene                    | 1.6                  | Not Detected                              | 3.6                   | Not Detected      |
| Bromomethane                     | 1.6                  | Not Detected                              | 6.4                   | Not Detected      |
| Chloroethane                     | 1.6                  | Not Detected                              | 4.4                   | Not Detected      |
| Freon 11                         | 1.6                  | Not Detected                              | 9.3                   | Not Detected      |
| Ethanol                          | 6.6                  | Not Detected                              | 12                    | Not Detected      |
| Freon 113                        | 1.6                  | Not Detected                              | 13                    | Not Detected      |
| 1,1-Dichloroethene               | 1.6                  | Not Detected                              | 6.5                   | Not Detected      |
| Acetone                          | 6.6                  | Not Detected                              | 16                    | Not Detected      |
| 2-Propanol                       | 6.6                  | Not Detected                              | 16                    | Not Detected      |
| Carbon Disulfide                 | 1.6                  | Not Detected                              | 5.1                   | Not Detected      |
| 3-Chloropropene                  | 6.6                  | Not Detected                              | 21                    | Not Detected      |
| Methylene Chloride               | 1.6                  | Not Detected                              | 5.7                   | Not Detected      |
| Methyl tert-butyl ether          | 1.6                  | Not Detected                              | 5.9                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.6                  | Not Detected                              | 6.5                   | Not Detected      |
| Hexane                           | 1.6                  | Not Detected                              | 5.8                   | Not Detected      |
| 1,1-Dichloroethane               | 1.6                  | Not Detected                              | 6.7                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.6                  | Not Detected                              | 4.9                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.6                  | Not Detected                              | 6.5                   | Not Detected      |
| Tetrahydrofuran                  | 1.6                  | Not Detected                              | 4.9                   | Not Detected      |
| Chloroform                       | 1.6                  | Not Detected                              | 8.0                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.6                  | Not Detected                              | 9.0                   | Not Detected      |
| Cyclohexane                      | 1.6                  | Not Detected                              | 5.7                   | Not Detected      |
| Carbon Tetrachloride             | 1.6                  | Not Detected                              | 10                    | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.6                  | Not Detected                              | 7.7                   | Not Detected      |
| Benzene                          | 1.6                  | Not Detected                              | 5.3                   | Not Detected      |
| 1,2-Dichloroethane               | 1.6                  | Not Detected                              | 6.7                   | Not Detected      |
| Heptane                          | 1.6                  | Not Detected                              | 6.8                   | Not Detected      |
| Trichloroethene                  | 1.6                  | Not Detected                              | 8.9                   | Not Detected      |
| 1,2-Dichloropropane              | 1.6                  | Not Detected                              | 7.6                   | Not Detected      |
| 1,4-Dioxane                      | 6.6                  | Not Detected                              | 24                    | Not Detected      |
| Bromodichloromethane             | 1.6                  | Not Detected                              | 11                    | Not Detected      |
| cis-1,3-Dichloropropene          | 1.6                  | Not Detected                              | 7.5                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.6                  | Not Detected                              | 6.8                   | Not Detected      |
| Toluene                          | 1.6                  | Not Detected                              | 6.2                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.6                  | Not Detected                              | 7.5                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-4A Lab Duplicate

Lab ID#: 0901521-03AA

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012908              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 3.30                 | Date of Analysis:   | 1/29/09 02:10 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.6                  | Not Detected        | 9.0                   | Not Detected      |
| Tetrachloroethene         | 1.6                  | Not Detected        | 11                    | Not Detected      |
| 2-Hexanone                | 6.6                  | Not Detected        | 27                    | Not Detected      |
| Dibromochloromethane      | 1.6                  | Not Detected        | 14                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.6                  | Not Detected        | 13                    | Not Detected      |
| Chlorobenzene             | 1.6                  | Not Detected        | 7.6                   | Not Detected      |
| Ethyl Benzene             | 1.6                  | Not Detected        | 7.2                   | Not Detected      |
| m,p-Xylene                | 1.6                  | Not Detected        | 7.2                   | Not Detected      |
| o-Xylene                  | 1.6                  | Not Detected        | 7.2                   | Not Detected      |
| Styrene                   | 1.6                  | Not Detected        | 7.0                   | Not Detected      |
| Bromoform                 | 1.6                  | Not Detected        | 17                    | Not Detected      |
| Cumene                    | 1.6                  | Not Detected        | 8.1                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.6                  | Not Detected        | 11                    | Not Detected      |
| Propylbenzene             | 1.6                  | Not Detected        | 8.1                   | Not Detected      |
| 4-Ethyltoluene            | 1.6                  | Not Detected        | 8.1                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.6                  | Not Detected        | 8.1                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.6                  | Not Detected        | 8.1                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.6                  | Not Detected        | 9.9                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.6                  | Not Detected        | 9.9                   | Not Detected      |
| alpha-Chlorotoluene       | 1.6                  | Not Detected        | 8.5                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.6                  | Not Detected        | 9.9                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 6.6                  | Not Detected        | 49                    | Not Detected      |
| Hexachlorobutadiene       | 6.6                  | Not Detected        | 70                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 104       | 70-130           |
| 1,2-Dichloroethane-d4 | 125       | 70-130           |
| 4-Bromofluorobenzene  | 112       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-4C

Lab ID#: 0901521-04A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | <b>x012909</b>               | <b>Date of Collection: 1/27/09</b>        |                               |                           |
|----------------------------------|------------------------------|---|-------------------------------|---------------------------|
| <b>Dil. Factor:</b>              | <b>2.28</b>                  | <b>Date of Analysis: 1/29/09 02:47 PM</b> |                               |                           |
| <b>Compound</b>                  | <b>Rpt. Limit<br/>(ppbv)</b> | <b>Amount<br/>(ppbv)</b>                  | <b>Rpt. Limit<br/>(uG/m3)</b> | <b>Amount<br/>(uG/m3)</b> |
| Freon 12                         | 1.1                          | 29  | 5.6                           | 140                       |
| Freon 114                        | 1.1                          | 1.6                                       | 8.0                           | 12                        |
| Chloromethane                    | 4.6                          | Not Detected                              | 9.4                           | Not Detected              |
| Vinyl Chloride                   | 1.1                          | Not Detected                              | 2.9                           | Not Detected              |
| 1,3-Butadiene                    | 1.1                          | Not Detected                              | 2.5                           | Not Detected              |
| Bromomethane                     | 1.1                          | Not Detected                              | 4.4                           | Not Detected              |
| Chloroethane                     | 1.1                          | Not Detected                              | 3.0                           | Not Detected              |
| Freon 11                         | 1.1                          | 1.4                                       | 6.4                           | 8.0                       |
| Ethanol                          | 4.6                          | Not Detected                              | 8.6                           | Not Detected              |
| Freon 113                        | 1.1                          | Not Detected                              | 8.7                           | Not Detected              |
| 1,1-Dichloroethene               | 1.1                          | Not Detected                              | 4.5                           | Not Detected              |
| Acetone                          | 4.6                          | 8.0                                       | 11                            | 19                        |
| 2-Propanol                       | 4.6                          | Not Detected                              | 11                            | Not Detected              |
| Carbon Disulfide                 | 1.1                          | Not Detected                              | 3.6                           | Not Detected              |
| 3-Chloropropene                  | 4.6                          | Not Detected                              | 14                            | Not Detected              |
| Methylene Chloride               | 1.1                          | Not Detected                              | 4.0                           | Not Detected              |
| Methyl tert-butyl ether          | 1.1                          | Not Detected                              | 4.1                           | Not Detected              |
| trans-1,2-Dichloroethene         | 1.1                          | Not Detected                              | 4.5                           | Not Detected              |
| Hexane                           | 1.1                          | Not Detected                              | 4.0                           | Not Detected              |
| 1,1-Dichloroethane               | 1.1                          | Not Detected                              | 4.6                           | Not Detected              |
| 2-Butanone (Methyl Ethyl Ketone) | 1.1                          | Not Detected                              | 3.4                           | Not Detected              |
| cis-1,2-Dichloroethene           | 1.1                          | Not Detected                              | 4.5                           | Not Detected              |
| Tetrahydrofuran                  | 1.1                          | Not Detected                              | 3.4                           | Not Detected              |
| Chloroform                       | 1.1                          | 1.2                                       | 5.6                           | 6.1                       |
| 1,1,1-Trichloroethane            | 1.1                          | Not Detected                              | 6.2                           | Not Detected              |
| Cyclohexane                      | 1.1                          | Not Detected                              | 3.9                           | Not Detected              |
| Carbon Tetrachloride             | 1.1                          | Not Detected                              | 7.2                           | Not Detected              |
| 2,2,4-Trimethylpentane           | 1.1                          | Not Detected                              | 5.3                           | Not Detected              |
| Benzene                          | 1.1                          | Not Detected                              | 3.6                           | Not Detected              |
| 1,2-Dichloroethane               | 1.1                          | Not Detected                              | 4.6                           | Not Detected              |
| Heptane                          | 1.1                          | Not Detected                              | 4.7                           | Not Detected              |
| Trichloroethene                  | 1.1                          | Not Detected                              | 6.1                           | Not Detected              |
| 1,2-Dichloropropane              | 1.1                          | Not Detected                              | 5.3                           | Not Detected              |
| 1,4-Dioxane                      | 4.6                          | Not Detected                              | 16                            | Not Detected              |
| Bromodichloromethane             | 1.1                          | Not Detected                              | 7.6                           | Not Detected              |
| cis-1,3-Dichloropropene          | 1.1                          | Not Detected                              | 5.2                           | Not Detected              |
| 4-Methyl-2-pentanone             | 1.1                          | Not Detected                              | 4.7                           | Not Detected              |
| Toluene                          | 1.1                          | Not Detected                              | 4.3                           | Not Detected              |
| trans-1,3-Dichloropropene        | 1.1                          | Not Detected                              | 5.2                           | Not Detected              |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-4C

Lab ID#: 0901521-04A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012909              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.28                 | Date of Analysis:   | 1/29/09 02:47 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.1                  | Not Detected        | 6.2                   | Not Detected      |
| Tetrachloroethene         | 1.1                  | Not Detected        | 7.7                   | Not Detected      |
| 2-Hexanone                | 4.6                  | Not Detected        | 19                    | Not Detected      |
| Dibromochloromethane      | 1.1                  | Not Detected        | 9.7                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.1                  | Not Detected        | 8.8                   | Not Detected      |
| Chlorobenzene             | 1.1                  | Not Detected        | 5.2                   | Not Detected      |
| Ethyl Benzene             | 1.1                  | Not Detected        | 4.9                   | Not Detected      |
| m,p-Xylene                | 1.1                  | Not Detected        | 5.0                   | Not Detected      |
| o-Xylene                  | 1.1                  | Not Detected        | 5.0                   | Not Detected      |
| Styrene                   | 1.1                  | Not Detected        | 4.8                   | Not Detected      |
| Bromoform                 | 1.1                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.1                  | Not Detected        | 7.8                   | Not Detected      |
| Propylbenzene             | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 4-Ethyltoluene            | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| alpha-Chlorotoluene       | 1.1                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.6                  | Not Detected        | 34                    | Not Detected      |
| Hexachlorobutadiene       | 4.6                  | Not Detected        | 49                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 102       | 70-130           |
| 1,2-Dichloroethane-d4 | 125       | 70-130           |
| 4-Bromofluorobenzene  | 112       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: PVP-5**

**Lab ID#: 0901521-05A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | <b>x012911</b>               | <b>Date of Collection: 1/27/09</b>        |                               |                           |
|----------------------------------|------------------------------|---|-------------------------------|---------------------------|
| <b>Dil. Factor:</b>              | <b>2.42</b>                  | <b>Date of Analysis: 1/29/09 04:01 PM</b> |                               |                           |
| <b>Compound</b>                  | <b>Rpt. Limit<br/>(ppbv)</b> | <b>Amount<br/>(ppbv)</b>                  | <b>Rpt. Limit<br/>(uG/m3)</b> | <b>Amount<br/>(uG/m3)</b> |
| Freon 12                         | 1.2                          | Not Detected                              | 6.0                           | Not Detected              |
| Freon 114                        | 1.2                          | Not Detected                              | 8.4                           | Not Detected              |
| Chloromethane                    | 4.8                          | Not Detected                              | 10                            | Not Detected              |
| Vinyl Chloride                   | 1.2                          | Not Detected                              | 3.1                           | Not Detected              |
| 1,3-Butadiene                    | 1.2                          | Not Detected                              | 2.7                           | Not Detected              |
| Bromomethane                     | 1.2                          | Not Detected                              | 4.7                           | Not Detected              |
| Chloroethane                     | 1.2                          | Not Detected                              | 3.2                           | Not Detected              |
| Freon 11                         | 1.2                          | Not Detected                              | 6.8                           | Not Detected              |
| Ethanol                          | 4.8                          | 14  | 9.1                           | 27                        |
| Freon 113                        | 1.2                          | Not Detected                              | 9.3                           | Not Detected              |
| 1,1-Dichloroethene               | 1.2                          | Not Detected                              | 4.8                           | Not Detected              |
| Acetone                          | 4.8                          | 9.0                                       | 11                            | 21                        |
| 2-Propanol                       | 4.8                          | Not Detected                              | 12                            | Not Detected              |
| Carbon Disulfide                 | 1.2                          | Not Detected                              | 3.8                           | Not Detected              |
| 3-Chloropropene                  | 4.8                          | Not Detected                              | 15                            | Not Detected              |
| Methylene Chloride               | 1.2                          | Not Detected                              | 4.2                           | Not Detected              |
| Methyl tert-butyl ether          | 1.2                          | Not Detected                              | 4.4                           | Not Detected              |
| trans-1,2-Dichloroethene         | 1.2                          | Not Detected                              | 4.8                           | Not Detected              |
| Hexane                           | 1.2                          | Not Detected                              | 4.3                           | Not Detected              |
| 1,1-Dichloroethane               | 1.2                          | Not Detected                              | 4.9                           | Not Detected              |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                          | 1.7                                       | 3.6                           | 5.0                       |
| cis-1,2-Dichloroethene           | 1.2                          | Not Detected                              | 4.8                           | Not Detected              |
| Tetrahydrofuran                  | 1.2                          | Not Detected                              | 3.6                           | Not Detected              |
| Chloroform                       | 1.2                          | Not Detected                              | 5.9                           | Not Detected              |
| 1,1,1-Trichloroethane            | 1.2                          | Not Detected                              | 6.6                           | Not Detected              |
| Cyclohexane                      | 1.2                          | Not Detected                              | 4.2                           | Not Detected              |
| Carbon Tetrachloride             | 1.2                          | Not Detected                              | 7.6                           | Not Detected              |
| 2,2,4-Trimethylpentane           | 1.2                          | Not Detected                              | 5.6                           | Not Detected              |
| Benzene                          | 1.2                          | Not Detected                              | 3.9                           | Not Detected              |
| 1,2-Dichloroethane               | 1.2                          | Not Detected                              | 4.9                           | Not Detected              |
| Heptane                          | 1.2                          | Not Detected                              | 5.0                           | Not Detected              |
| Trichloroethene                  | 1.2                          | Not Detected                              | 6.5                           | Not Detected              |
| 1,2-Dichloropropane              | 1.2                          | Not Detected                              | 5.6                           | Not Detected              |
| 1,4-Dioxane                      | 4.8                          | Not Detected                              | 17                            | Not Detected              |
| Bromodichloromethane             | 1.2                          | Not Detected                              | 8.1                           | Not Detected              |
| cis-1,3-Dichloropropene          | 1.2                          | Not Detected                              | 5.5                           | Not Detected              |
| 4-Methyl-2-pentanone             | 1.2                          | Not Detected                              | 5.0                           | Not Detected              |
| Toluene                          | 1.2                          | 11  | 4.6                           | 42                        |
| trans-1,3-Dichloropropene        | 1.2                          | Not Detected                              | 5.5                           | Not Detected              |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PVP-5

Lab ID#: 0901521-05A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012911              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.42                 | Date of Analysis:   | 1/29/09 04:01 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.6                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | Not Detected        | 8.2                   | Not Detected      |
| 2-Hexanone                | 4.8                  | Not Detected        | 20                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 10                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 9.3                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.6                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| m,p-Xylene                | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| o-Xylene                  | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| Styrene                   | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 8.3                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 7.3                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 7.3                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.3                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 7.3                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.8                  | Not Detected        | 36                    | Not Detected      |
| Hexachlorobutadiene       | 4.8                  | Not Detected        | 52                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 103       | 70-130           |
| 1,2-Dichloroethane-d4 | 126       | 70-130           |
| 4-Bromofluorobenzene  | 113       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-3A

Lab ID#: 0901521-06A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| File Name:                       | x012912              | Date of Collection: | 1/27/09               |                   |
|----------------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:                     | 2.31                 | Date of Analysis:   | 1/29/09 04:38 PM      |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| Freon 114                        | 1.2                  | Not Detected        | 8.1                   | Not Detected      |
| Chloromethane                    | 4.6                  | Not Detected        | 9.5                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected        | 3.0                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected        | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected        | 4.5                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected        | 3.0                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected        | 6.5                   | Not Detected      |
| Ethanol                          | 4.6                  | Not Detected        | 8.7                   | Not Detected      |
| Freon 113                        | 1.2                  | Not Detected        | 8.8                   | Not Detected      |
| 1,1-Dichloroethene               | 1.2                  | Not Detected        | 4.6                   | Not Detected      |
| Acetone                          | 4.6                  | Not Detected        | 11                    | Not Detected      |
| 2-Propanol                       | 4.6                  | Not Detected        | 11                    | Not Detected      |
| Carbon Disulfide                 | 1.2                  | Not Detected        | 3.6                   | Not Detected      |
| 3-Chloropropene                  | 4.6                  | Not Detected        | 14                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected        | 4.0                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected        | 4.2                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected        | 4.6                   | Not Detected      |
| Hexane                           | 1.2                  | Not Detected        | 4.1                   | Not Detected      |
| 1,1-Dichloroethane               | 1.2                  | Not Detected        | 4.7                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | Not Detected        | 3.4                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected        | 4.6                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected        | 3.4                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected        | 5.6                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected        | 6.3                   | Not Detected      |
| Cyclohexane                      | 1.2                  | Not Detected        | 4.0                   | Not Detected      |
| Carbon Tetrachloride             | 1.2                  | Not Detected        | 7.3                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | Not Detected        | 5.4                   | Not Detected      |
| Benzene                          | 1.2                  | Not Detected        | 3.7                   | Not Detected      |
| 1,2-Dichloroethane               | 1.2                  | Not Detected        | 4.7                   | Not Detected      |
| Heptane                          | 1.2                  | Not Detected        | 4.7                   | Not Detected      |
| Trichloroethene                  | 1.2                  | Not Detected        | 6.2                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected        | 5.3                   | Not Detected      |
| 1,4-Dioxane                      | 4.6                  | Not Detected        | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected        | 7.7                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected        | 4.7                   | Not Detected      |
| Toluene                          | 1.2                  | Not Detected        | 4.4                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected        | 5.2                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-3A

Lab ID#: 0901521-06A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012912              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.31                 | Date of Analysis:   | 1/29/09 04:38 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.3                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | Not Detected        | 7.8                   | Not Detected      |
| 2-Hexanone                | 4.6                  | Not Detected        | 19                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 9.8                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 8.9                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.3                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| m,p-Xylene                | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| o-Xylene                  | 1.2                  | Not Detected        | 5.0                   | Not Detected      |
| Styrene                   | 1.2                  | Not Detected        | 4.9                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 7.9                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.7                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.0                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 6.9                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.6                  | Not Detected        | 34                    | Not Detected      |
| Hexachlorobutadiene       | 4.6                  | Not Detected        | 49                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 103       | 70-130           |
| 1,2-Dichloroethane-d4 | 123       | 70-130           |
| 4-Bromofluorobenzene  | 116       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-4A

Lab ID#: 0901521-07A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012913              | <b>Date of Collection:</b> 1/27/09        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 2.40                 | <b>Date of Analysis:</b> 1/29/09 05:15 PM |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | 2.5                                       | 5.9                   | 12                |
| Freon 114                        | 1.2                  | Not Detected                              | 8.4                   | Not Detected      |
| Chloromethane                    | 4.8                  | Not Detected                              | 9.9                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected                              | 3.1                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected                              | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected                              | 4.7                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected                              | 3.2                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected                              | 6.7                   | Not Detected      |
| Ethanol                          | 4.8                  | 6.6                                       | 9.0                   | 12                |
| Freon 113                        | 1.2                  | Not Detected                              | 9.2                   | Not Detected      |
| 1,1-Dichloroethene               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Acetone                          | 4.8                  | 12  | 11                    | 28                |
| 2-Propanol                       | 4.8                  | Not Detected                              | 12                    | Not Detected      |
| Carbon Disulfide                 | 1.2                  | Not Detected                              | 3.7                   | Not Detected      |
| 3-Chloropropene                  | 4.8                  | Not Detected                              | 15                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected                              | 4.2                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected                              | 4.3                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Hexane                           | 1.2                  | Not Detected                              | 4.2                   | Not Detected      |
| 1,1-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | Not Detected                              | 3.5                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected                              | 3.5                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected                              | 5.8                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected                              | 6.5                   | Not Detected      |
| Cyclohexane                      | 1.2                  | Not Detected                              | 4.1                   | Not Detected      |
| Carbon Tetrachloride             | 1.2                  | Not Detected                              | 7.6                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | Not Detected                              | 5.6                   | Not Detected      |
| Benzene                          | 1.2                  | Not Detected                              | 3.8                   | Not Detected      |
| 1,2-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Heptane                          | 1.2                  | Not Detected                              | 4.9                   | Not Detected      |
| Trichloroethene                  | 1.2                  | Not Detected                              | 6.4                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected                              | 5.5                   | Not Detected      |
| 1,4-Dioxane                      | 4.8                  | Not Detected                              | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected                              | 8.0                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected                              | 4.9                   | Not Detected      |
| Toluene                          | 1.2                  | 1.9                                       | 4.5                   | 7.3               |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-4A

Lab ID#: 0901521-07A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012913              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.40                 | Date of Analysis:   | 1/29/09 05:15 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.5                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | 15                  | 8.1                   | 100               |
| 2-Hexanone                | 4.8                  | Not Detected        | 20                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 10                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 9.2                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.5                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| m,p-Xylene                | 1.2                  | 3.2                 | 5.2                   | 14                |
| o-Xylene                  | 1.2                  | 1.6                 | 5.2                   | 6.9               |
| Styrene                   | 1.2                  | Not Detected        | 5.1                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 8.2                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.2                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.8                  | Not Detected        | 36                    | Not Detected      |
| Hexachlorobutadiene       | 4.8                  | Not Detected        | 51                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 106       | 70-130           |
| 1,2-Dichloroethane-d4 | 126       | 70-130           |
| 4-Bromofluorobenzene  | 113       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-5A

Lab ID#: 0901521-08A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012914              | <b>Date of Collection:</b> 1/27/09        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 2.39                 | <b>Date of Analysis:</b> 1/29/09 05:52 PM |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.2                  | 3.4                                       | 5.9                   | 17                |
| Freon 114                        | 1.2                  | Not Detected                              | 8.4                   | Not Detected      |
| Chloromethane                    | 4.8                  | Not Detected                              | 9.9                   | Not Detected      |
| Vinyl Chloride                   | 1.2                  | Not Detected                              | 3.0                   | Not Detected      |
| 1,3-Butadiene                    | 1.2                  | Not Detected                              | 2.6                   | Not Detected      |
| Bromomethane                     | 1.2                  | Not Detected                              | 4.6                   | Not Detected      |
| Chloroethane                     | 1.2                  | Not Detected                              | 3.2                   | Not Detected      |
| Freon 11                         | 1.2                  | Not Detected                              | 6.7                   | Not Detected      |
| Ethanol                          | 4.8                  | Not Detected                              | 9.0                   | Not Detected      |
| Freon 113                        | 1.2                  | 2.3                                       | 9.2                   | 17                |
| 1,1-Dichloroethene               | 1.2                  | Not Detected                              | 4.7                   | Not Detected      |
| Acetone                          | 4.8                  | 13  | 11                    | 32                |
| 2-Propanol                       | 4.8                  | Not Detected                              | 12                    | Not Detected      |
| Carbon Disulfide                 | 1.2                  | Not Detected                              | 3.7                   | Not Detected      |
| 3-Chloropropene                  | 4.8                  | Not Detected                              | 15                    | Not Detected      |
| Methylene Chloride               | 1.2                  | Not Detected                              | 4.2                   | Not Detected      |
| Methyl tert-butyl ether          | 1.2                  | Not Detected                              | 4.3                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.2                  | Not Detected                              | 4.7                   | Not Detected      |
| Hexane                           | 1.2                  | 1.5                                       | 4.2                   | 5.3               |
| 1,1-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.2                  | Not Detected                              | 3.5                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.2                  | Not Detected                              | 4.7                   | Not Detected      |
| Tetrahydrofuran                  | 1.2                  | Not Detected                              | 3.5                   | Not Detected      |
| Chloroform                       | 1.2                  | Not Detected                              | 5.8                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.2                  | Not Detected                              | 6.5                   | Not Detected      |
| Cyclohexane                      | 1.2                  | Not Detected                              | 4.1                   | Not Detected      |
| Carbon Tetrachloride             | 1.2                  | Not Detected                              | 7.5                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.2                  | Not Detected                              | 5.6                   | Not Detected      |
| Benzene                          | 1.2                  | 4.4                                       | 3.8                   | 14                |
| 1,2-Dichloroethane               | 1.2                  | Not Detected                              | 4.8                   | Not Detected      |
| Heptane                          | 1.2                  | 1.2                                       | 4.9                   | 5.1               |
| Trichloroethene                  | 1.2                  | Not Detected                              | 6.4                   | Not Detected      |
| 1,2-Dichloropropane              | 1.2                  | Not Detected                              | 5.5                   | Not Detected      |
| 1,4-Dioxane                      | 4.8                  | Not Detected                              | 17                    | Not Detected      |
| Bromodichloromethane             | 1.2                  | Not Detected                              | 8.0                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.2                  | Not Detected                              | 4.9                   | Not Detected      |
| Toluene                          | 1.2                  | Not Detected                              | 4.5                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.2                  | Not Detected                              | 5.4                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-5A

Lab ID#: 0901521-08A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012914              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.39                 | Date of Analysis:   | 1/29/09 05:52 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.2                  | Not Detected        | 6.5                   | Not Detected      |
| Tetrachloroethene         | 1.2                  | 3.9                 | 8.1                   | 26                |
| 2-Hexanone                | 4.8                  | Not Detected        | 20                    | Not Detected      |
| Dibromochloromethane      | 1.2                  | Not Detected        | 10                    | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.2                  | Not Detected        | 9.2                   | Not Detected      |
| Chlorobenzene             | 1.2                  | Not Detected        | 5.5                   | Not Detected      |
| Ethyl Benzene             | 1.2                  | 3.1                 | 5.2                   | 13                |
| m,p-Xylene                | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| o-Xylene                  | 1.2                  | Not Detected        | 5.2                   | Not Detected      |
| Styrene                   | 1.2                  | Not Detected        | 5.1                   | Not Detected      |
| Bromoform                 | 1.2                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.2                  | Not Detected        | 8.2                   | Not Detected      |
| Propylbenzene             | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 4-Ethyltoluene            | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.2                  | Not Detected        | 5.9                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| alpha-Chlorotoluene       | 1.2                  | Not Detected        | 6.2                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.2                  | Not Detected        | 7.2                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.8                  | Not Detected        | 35                    | Not Detected      |
| Hexachlorobutadiene       | 4.8                  | Not Detected        | 51                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 103       | 70-130           |
| 1,2-Dichloroethane-d4 | 129       | 70-130           |
| 4-Bromofluorobenzene  | 110       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: QCFB**

**Lab ID#: 0901521-09A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012915              | <b>Date of Collection: 1/27/09</b>        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 2.28                 | <b>Date of Analysis: 1/29/09 06:41 PM</b> |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.1                  | Not Detected                              | 5.6                   | Not Detected      |
| Freon 114                        | 1.1                  | Not Detected                              | 8.0                   | Not Detected      |
| Chloromethane                    | 4.6                  | Not Detected                              | 9.4                   | Not Detected      |
| Vinyl Chloride                   | 1.1                  | Not Detected                              | 2.9                   | Not Detected      |
| 1,3-Butadiene                    | 1.1                  | Not Detected                              | 2.5                   | Not Detected      |
| Bromomethane                     | 1.1                  | Not Detected                              | 4.4                   | Not Detected      |
| Chloroethane                     | 1.1                  | Not Detected                              | 3.0                   | Not Detected      |
| Freon 11                         | 1.1                  | Not Detected                              | 6.4                   | Not Detected      |
| Ethanol                          | 4.6                  | Not Detected                              | 8.6                   | Not Detected      |
| Freon 113                        | 1.1                  | Not Detected                              | 8.7                   | Not Detected      |
| 1,1-Dichloroethene               | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Acetone                          | 4.6                  | Not Detected                              | 11                    | Not Detected      |
| 2-Propanol                       | 4.6                  | Not Detected                              | 11                    | Not Detected      |
| Carbon Disulfide                 | 1.1                  | Not Detected                              | 3.6                   | Not Detected      |
| 3-Chloropropene                  | 4.6                  | Not Detected                              | 14                    | Not Detected      |
| Methylene Chloride               | 1.1                  | Not Detected                              | 4.0                   | Not Detected      |
| Methyl tert-butyl ether          | 1.1                  | Not Detected                              | 4.1                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Hexane                           | 1.1                  | Not Detected                              | 4.0                   | Not Detected      |
| 1,1-Dichloroethane               | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.1                  | Not Detected                              | 3.4                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Tetrahydrofuran                  | 1.1                  | Not Detected                              | 3.4                   | Not Detected      |
| Chloroform                       | 1.1                  | Not Detected                              | 5.6                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.1                  | Not Detected                              | 6.2                   | Not Detected      |
| Cyclohexane                      | 1.1                  | Not Detected                              | 3.9                   | Not Detected      |
| Carbon Tetrachloride             | 1.1                  | Not Detected                              | 7.2                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.1                  | Not Detected                              | 5.3                   | Not Detected      |
| Benzene                          | 1.1                  | Not Detected                              | 3.6                   | Not Detected      |
| 1,2-Dichloroethane               | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| Heptane                          | 1.1                  | Not Detected                              | 4.7                   | Not Detected      |
| Trichloroethene                  | 1.1                  | Not Detected                              | 6.1                   | Not Detected      |
| 1,2-Dichloropropane              | 1.1                  | Not Detected                              | 5.3                   | Not Detected      |
| 1,4-Dioxane                      | 4.6                  | Not Detected                              | 16                    | Not Detected      |
| Bromodichloromethane             | 1.1                  | Not Detected                              | 7.6                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.1                  | Not Detected                              | 5.2                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.1                  | Not Detected                              | 4.7                   | Not Detected      |
| Toluene                          | 1.1                  | Not Detected                              | 4.3                   | Not Detected      |
| trans-1,3-Dichloropropene        | 1.1                  | Not Detected                              | 5.2                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: QCFB

Lab ID#: 0901521-09A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012915              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.28                 | Date of Analysis:   | 1/29/09 06:41 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.1                  | Not Detected        | 6.2                   | Not Detected      |
| Tetrachloroethene         | 1.1                  | Not Detected        | 7.7                   | Not Detected      |
| 2-Hexanone                | 4.6                  | Not Detected        | 19                    | Not Detected      |
| Dibromochloromethane      | 1.1                  | Not Detected        | 9.7                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.1                  | Not Detected        | 8.8                   | Not Detected      |
| Chlorobenzene             | 1.1                  | Not Detected        | 5.2                   | Not Detected      |
| Ethyl Benzene             | 1.1                  | Not Detected        | 4.9                   | Not Detected      |
| m,p-Xylene                | 1.1                  | Not Detected        | 5.0                   | Not Detected      |
| o-Xylene                  | 1.1                  | Not Detected        | 5.0                   | Not Detected      |
| Styrene                   | 1.1                  | Not Detected        | 4.8                   | Not Detected      |
| Bromoform                 | 1.1                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.1                  | Not Detected        | 7.8                   | Not Detected      |
| Propylbenzene             | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 4-Ethyltoluene            | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| alpha-Chlorotoluene       | 1.1                  | Not Detected        | 5.9                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.6                  | Not Detected        | 34                    | Not Detected      |
| Hexachlorobutadiene       | 4.6                  | Not Detected        | 49                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 104       | 70-130           |
| 1,2-Dichloroethane-d4 | 124       | 70-130           |
| 4-Bromofluorobenzene  | 115       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-8A

Lab ID#: 0901521-10A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012916              | <b>Date of Collection:</b> 1/27/09        |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 2.26                 | <b>Date of Analysis:</b> 1/29/09 07:18 PM |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 1.1                  | Not Detected                              | 5.6                   | Not Detected      |
| Freon 114                        | 1.1                  | Not Detected                              | 7.9                   | Not Detected      |
| Chloromethane                    | 4.5                  | Not Detected                              | 9.3                   | Not Detected      |
| Vinyl Chloride                   | 1.1                  | Not Detected                              | 2.9                   | Not Detected      |
| 1,3-Butadiene                    | 1.1                  | Not Detected                              | 2.5                   | Not Detected      |
| Bromomethane                     | 1.1                  | Not Detected                              | 4.4                   | Not Detected      |
| Chloroethane                     | 1.1                  | Not Detected                              | 3.0                   | Not Detected      |
| Freon 11                         | 1.1                  | Not Detected                              | 6.3                   | Not Detected      |
| Ethanol                          | 4.5                  | Not Detected                              | 8.5                   | Not Detected      |
| Freon 113                        | 1.1                  | Not Detected                              | 8.7                   | Not Detected      |
| 1,1-Dichloroethene               | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Acetone                          | 4.5                  | Not Detected                              | 11                    | Not Detected      |
| 2-Propanol                       | 4.5                  | Not Detected                              | 11                    | Not Detected      |
| Carbon Disulfide                 | 1.1                  | Not Detected                              | 3.5                   | Not Detected      |
| 3-Chloropropene                  | 4.5                  | Not Detected                              | 14                    | Not Detected      |
| Methylene Chloride               | 1.1                  | Not Detected                              | 3.9                   | Not Detected      |
| Methyl tert-butyl ether          | 1.1                  | Not Detected                              | 4.1                   | Not Detected      |
| trans-1,2-Dichloroethene         | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Hexane                           | 1.1                  | Not Detected                              | 4.0                   | Not Detected      |
| 1,1-Dichloroethane               | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 1.1                  | Not Detected                              | 3.3                   | Not Detected      |
| cis-1,2-Dichloroethene           | 1.1                  | Not Detected                              | 4.5                   | Not Detected      |
| Tetrahydrofuran                  | 1.1                  | Not Detected                              | 3.3                   | Not Detected      |
| Chloroform                       | 1.1                  | Not Detected                              | 5.5                   | Not Detected      |
| 1,1,1-Trichloroethane            | 1.1                  | 2.4                                       | 6.2                   | 13                |
| Cyclohexane                      | 1.1                  | Not Detected                              | 3.9                   | Not Detected      |
| Carbon Tetrachloride             | 1.1                  | Not Detected                              | 7.1                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 1.1                  | Not Detected                              | 5.3                   | Not Detected      |
| Benzene                          | 1.1                  | Not Detected                              | 3.6                   | Not Detected      |
| 1,2-Dichloroethane               | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| Heptane                          | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| Trichloroethene                  | 1.1                  | 1.2                                       | 6.1                   | 6.3               |
| 1,2-Dichloropropane              | 1.1                  | Not Detected                              | 5.2                   | Not Detected      |
| 1,4-Dioxane                      | 4.5                  | Not Detected                              | 16                    | Not Detected      |
| Bromodichloromethane             | 1.1                  | Not Detected                              | 7.6                   | Not Detected      |
| cis-1,3-Dichloropropene          | 1.1                  | Not Detected                              | 5.1                   | Not Detected      |
| 4-Methyl-2-pentanone             | 1.1                  | Not Detected                              | 4.6                   | Not Detected      |
| Toluene                          | 1.1                  | 1.8                                       | 4.2                   | 6.6               |
| trans-1,3-Dichloropropene        | 1.1                  | Not Detected                              | 5.1                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-8A

Lab ID#: 0901521-10A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

| File Name:                | x012916              | Date of Collection: | 1/27/09               |                   |
|---------------------------|----------------------|---------------------|-----------------------|-------------------|
| Dil. Factor:              | 2.26                 | Date of Analysis:   | 1/29/09 07:18 PM      |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)    | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 1.1                  | Not Detected        | 6.2                   | Not Detected      |
| Tetrachloroethene         | 1.1                  | 1.3                 | 7.7                   | 8.6               |
| 2-Hexanone                | 4.5                  | Not Detected        | 18                    | Not Detected      |
| Dibromochloromethane      | 1.1                  | Not Detected        | 9.6                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 1.1                  | Not Detected        | 8.7                   | Not Detected      |
| Chlorobenzene             | 1.1                  | Not Detected        | 5.2                   | Not Detected      |
| Ethyl Benzene             | 1.1                  | Not Detected        | 4.9                   | Not Detected      |
| m,p-Xylene                | 1.1                  | Not Detected        | 4.9                   | Not Detected      |
| o-Xylene                  | 1.1                  | Not Detected        | 4.9                   | Not Detected      |
| Styrene                   | 1.1                  | Not Detected        | 4.8                   | Not Detected      |
| Bromoform                 | 1.1                  | Not Detected        | 12                    | Not Detected      |
| Cumene                    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 1.1                  | Not Detected        | 7.8                   | Not Detected      |
| Propylbenzene             | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 4-Ethyltoluene            | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 1.1                  | Not Detected        | 5.6                   | Not Detected      |
| 1,3-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,4-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| alpha-Chlorotoluene       | 1.1                  | Not Detected        | 5.8                   | Not Detected      |
| 1,2-Dichlorobenzene       | 1.1                  | Not Detected        | 6.8                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 4.5                  | Not Detected        | 34                    | Not Detected      |
| Hexachlorobutadiene       | 4.5                  | Not Detected        | 48                    | Not Detected      |

## TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

Container Type: 1 Liter Summa Canister (100% Certified)

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 104       | 70-130           |
| 1,2-Dichloroethane-d4 | 120       | 70-130           |
| 4-Bromofluorobenzene  | 114       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: QCTB**

**Lab ID#: 0901521-11A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012917              | <b>Date of Collection: NA</b>             |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 1.00                 | <b>Date of Analysis: 1/29/09 08:20 PM</b> |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 0.50                 | Not Detected                              | 2.5                   | Not Detected      |
| Freon 114                        | 0.50                 | Not Detected                              | 3.5                   | Not Detected      |
| Chloromethane                    | 2.0                  | Not Detected                              | 4.1                   | Not Detected      |
| Vinyl Chloride                   | 0.50                 | Not Detected                              | 1.3                   | Not Detected      |
| 1,3-Butadiene                    | 0.50                 | Not Detected                              | 1.1                   | Not Detected      |
| Bromomethane                     | 0.50                 | Not Detected                              | 1.9                   | Not Detected      |
| Chloroethane                     | 0.50                 | Not Detected                              | 1.3                   | Not Detected      |
| Freon 11                         | 0.50                 | Not Detected                              | 2.8                   | Not Detected      |
| Ethanol                          | 2.0                  | Not Detected                              | 3.8                   | Not Detected      |
| Freon 113                        | 0.50                 | Not Detected                              | 3.8                   | Not Detected      |
| 1,1-Dichloroethene               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Acetone                          | 2.0                  | Not Detected                              | 4.8                   | Not Detected      |
| 2-Propanol                       | 2.0                  | Not Detected                              | 4.9                   | Not Detected      |
| Carbon Disulfide                 | 0.50                 | Not Detected                              | 1.6                   | Not Detected      |
| 3-Chloropropene                  | 2.0                  | Not Detected                              | 6.3                   | Not Detected      |
| Methylene Chloride               | 0.50                 | Not Detected                              | 1.7                   | Not Detected      |
| Methyl tert-butyl ether          | 0.50                 | Not Detected                              | 1.8                   | Not Detected      |
| trans-1,2-Dichloroethene         | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Hexane                           | 0.50                 | Not Detected                              | 1.8                   | Not Detected      |
| 1,1-Dichloroethane               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50                 | Not Detected                              | 1.5                   | Not Detected      |
| cis-1,2-Dichloroethene           | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Tetrahydrofuran                  | 0.50                 | Not Detected                              | 1.5                   | Not Detected      |
| Chloroform                       | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,1,1-Trichloroethane            | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| Cyclohexane                      | 0.50                 | Not Detected                              | 1.7                   | Not Detected      |
| Carbon Tetrachloride             | 0.50                 | Not Detected                              | 3.1                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| Benzene                          | 0.50                 | Not Detected                              | 1.6                   | Not Detected      |
| 1,2-Dichloroethane               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Heptane                          | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Trichloroethene                  | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| 1,2-Dichloropropane              | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| 1,4-Dioxane                      | 2.0                  | Not Detected                              | 7.2                   | Not Detected      |
| Bromodichloromethane             | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| cis-1,3-Dichloropropene          | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| 4-Methyl-2-pentanone             | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Toluene                          | 0.50                 | Not Detected                              | 1.9                   | Not Detected      |
| trans-1,3-Dichloropropene        | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: QCTB**

**Lab ID#: 0901521-11A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>         | x012917              | <b>Date of Collection: NA</b>             |                       |                   |
|---------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>       | 1.00                 | <b>Date of Analysis: 1/29/09 08:20 PM</b> |                       |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| Tetrachloroethene         | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| 2-Hexanone                | 2.0                  | Not Detected                              | 8.2                   | Not Detected      |
| Dibromochloromethane      | 0.50                 | Not Detected                              | 4.2                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 0.50                 | Not Detected                              | 3.8                   | Not Detected      |
| Chlorobenzene             | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| Ethyl Benzene             | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| m,p-Xylene                | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| o-Xylene                  | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| Styrene                   | 0.50                 | Not Detected                              | 2.1                   | Not Detected      |
| Bromoform                 | 0.50                 | Not Detected                              | 5.2                   | Not Detected      |
| Cumene                    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| Propylbenzene             | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 4-Ethyltoluene            | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,3-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| 1,4-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| alpha-Chlorotoluene       | 0.50                 | Not Detected                              | 2.6                   | Not Detected      |
| 1,2-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 2.0                  | Not Detected                              | 15                    | Not Detected      |
| Hexachlorobutadiene       | 2.0                  | Not Detected                              | 21                    | Not Detected      |

**TENTATIVELY IDENTIFIED COMPOUNDS**

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

**Container Type: 1 Liter Summa Canister (100% Certified)**

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 103       | 70-130           |
| 1,2-Dichloroethane-d4 | 127       | 70-130           |
| 4-Bromofluorobenzene  | 115       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: Lab Blank**

**Lab ID#: 0901521-12A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | x012905              | <b>Date of Collection: NA</b>             |                       |                   |
|----------------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>              | 1.00                 | <b>Date of Analysis: 1/29/09 11:37 AM</b> |                       |                   |
| Compound                         | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                         | 0.50                 | Not Detected                              | 2.5                   | Not Detected      |
| Freon 114                        | 0.50                 | Not Detected                              | 3.5                   | Not Detected      |
| Chloromethane                    | 2.0                  | Not Detected                              | 4.1                   | Not Detected      |
| Vinyl Chloride                   | 0.50                 | Not Detected                              | 1.3                   | Not Detected      |
| 1,3-Butadiene                    | 0.50                 | Not Detected                              | 1.1                   | Not Detected      |
| Bromomethane                     | 0.50                 | Not Detected                              | 1.9                   | Not Detected      |
| Chloroethane                     | 0.50                 | Not Detected                              | 1.3                   | Not Detected      |
| Freon 11                         | 0.50                 | Not Detected                              | 2.8                   | Not Detected      |
| Ethanol                          | 2.0                  | Not Detected                              | 3.8                   | Not Detected      |
| Freon 113                        | 0.50                 | Not Detected                              | 3.8                   | Not Detected      |
| 1,1-Dichloroethene               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Acetone                          | 2.0                  | Not Detected                              | 4.8                   | Not Detected      |
| 2-Propanol                       | 2.0                  | Not Detected                              | 4.9                   | Not Detected      |
| Carbon Disulfide                 | 0.50                 | Not Detected                              | 1.6                   | Not Detected      |
| 3-Chloropropene                  | 2.0                  | Not Detected                              | 6.3                   | Not Detected      |
| Methylene Chloride               | 0.50                 | Not Detected                              | 1.7                   | Not Detected      |
| Methyl tert-butyl ether          | 0.50                 | Not Detected                              | 1.8                   | Not Detected      |
| trans-1,2-Dichloroethene         | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Hexane                           | 0.50                 | Not Detected                              | 1.8                   | Not Detected      |
| 1,1-Dichloroethane               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50                 | Not Detected                              | 1.5                   | Not Detected      |
| cis-1,2-Dichloroethene           | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Tetrahydrofuran                  | 0.50                 | Not Detected                              | 1.5                   | Not Detected      |
| Chloroform                       | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,1,1-Trichloroethane            | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| Cyclohexane                      | 0.50                 | Not Detected                              | 1.7                   | Not Detected      |
| Carbon Tetrachloride             | 0.50                 | Not Detected                              | 3.1                   | Not Detected      |
| 2,2,4-Trimethylpentane           | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| Benzene                          | 0.50                 | Not Detected                              | 1.6                   | Not Detected      |
| 1,2-Dichloroethane               | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Heptane                          | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Trichloroethene                  | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| 1,2-Dichloropropane              | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| 1,4-Dioxane                      | 2.0                  | Not Detected                              | 7.2                   | Not Detected      |
| Bromodichloromethane             | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| cis-1,3-Dichloropropene          | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| 4-Methyl-2-pentanone             | 0.50                 | Not Detected                              | 2.0                   | Not Detected      |
| Toluene                          | 0.50                 | Not Detected                              | 1.9                   | Not Detected      |
| trans-1,3-Dichloropropene        | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: Lab Blank**

**Lab ID#: 0901521-12A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>         | x012905              | <b>Date of Collection:</b> NA             |                       |                   |
|---------------------------|----------------------|---|-----------------------|-------------------|
| <b>Dil. Factor:</b>       | 1.00                 | <b>Date of Analysis:</b> 1/29/09 11:37 AM |                       |                   |
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                          | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| 1,1,2-Trichloroethane     | 0.50                 | Not Detected                              | 2.7                   | Not Detected      |
| Tetrachloroethene         | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| 2-Hexanone                | 2.0                  | Not Detected                              | 8.2                   | Not Detected      |
| Dibromochloromethane      | 0.50                 | Not Detected                              | 4.2                   | Not Detected      |
| 1,2-Dibromoethane (EDB)   | 0.50                 | Not Detected                              | 3.8                   | Not Detected      |
| Chlorobenzene             | 0.50                 | Not Detected                              | 2.3                   | Not Detected      |
| Ethyl Benzene             | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| m,p-Xylene                | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| o-Xylene                  | 0.50                 | Not Detected                              | 2.2                   | Not Detected      |
| Styrene                   | 0.50                 | Not Detected                              | 2.1                   | Not Detected      |
| Bromoform                 | 0.50                 | Not Detected                              | 5.2                   | Not Detected      |
| Cumene                    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,1,2,2-Tetrachloroethane | 0.50                 | Not Detected                              | 3.4                   | Not Detected      |
| Propylbenzene             | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 4-Ethyltoluene            | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,3,5-Trimethylbenzene    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,2,4-Trimethylbenzene    | 0.50                 | Not Detected                              | 2.4                   | Not Detected      |
| 1,3-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| 1,4-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| alpha-Chlorotoluene       | 0.50                 | Not Detected                              | 2.6                   | Not Detected      |
| 1,2-Dichlorobenzene       | 0.50                 | Not Detected                              | 3.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene    | 2.0                  | Not Detected                              | 15                    | Not Detected      |
| Hexachlorobutadiene       | 2.0                  | Not Detected                              | 21                    | Not Detected      |

**TENTATIVELY IDENTIFIED COMPOUNDS**

| Compound                    | CAS Number | Match Quality | Amount<br>(ppbv) |
|-----------------------------|------------|---------------|------------------|
| Vinyl Acetate               | 108-05-4   | NA            | Not Detected     |
| trans-1,4-Dichloro-2-butene | 110-57-6   | NA            | Not Detected     |
| Iodomethane                 | 74-88-4    | NA            | Not Detected     |

**Container Type: NA - Not Applicable**

| Surrogates            | %Recovery | Method<br>Limits |
|-----------------------|-----------|------------------|
| Toluene-d8            | 98        | 70-130           |
| 1,2-Dichloroethane-d4 | 119       | 70-130           |
| 4-Bromofluorobenzene  | 114       | 70-130           |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: CCV**

**Lab ID#: 0901521-13A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

| <b>File Name:</b>                | <b>x012902</b> | <b>Date of Collection:</b> NA             |
|----------------------------------|----------------|---|
| <b>Dil. Factor:</b>              | <b>1.00</b>    | <b>Date of Analysis:</b> 1/29/09 09:20 AM |
| <hr/>                            |                |   |
| <hr/>                            |                |   |
| <b>Compound</b>                  |                | <b>%Recovery</b>                          |
| Freon 12                         |                | 101                                       |
| Freon 114                        |                | 96  |
| Chloromethane                    |                | 98  |
| Vinyl Chloride                   |                | 91  |
| 1,3-Butadiene                    |                | 87  |
| Bromomethane                     |                | 101                                       |
| Chloroethane                     |                | 99  |
| Freon 11                         |                | 102                                       |
| Ethanol                          |                | 85  |
| Freon 113                        |                | 90  |
| 1,1-Dichloroethene               |                | 91  |
| Acetone                          |                | 86  |
| 2-Propanol                       |                | 87  |
| Carbon Disulfide                 |                | 84  |
| 3-Chloropropene                  |                | 92  |
| Methylene Chloride               |                | 89  |
| Methyl tert-butyl ether          |                | 95  |
| trans-1,2-Dichloroethene         |                | 82  |
| Hexane                           |                | 77  |
| 1,1-Dichloroethane               |                | 88  |
| 2-Butanone (Methyl Ethyl Ketone) |                | 74  |
| cis-1,2-Dichloroethene           |                | 75  |
| Tetrahydrofuran                  |                | 81  |
| Chloroform                       |                | 88  |
| 1,1,1-Trichloroethane            |                | 97  |
| Cyclohexane                      |                | 82  |
| Carbon Tetrachloride             |                | 100                                       |
| 2,2,4-Trimethylpentane           |                | 80  |
| Benzene                          |                | 82  |
| 1,2-Dichloroethane               |                | 109                                       |
| Heptane                          |                | 86  |
| Trichloroethene                  |                | 92  |
| 1,2-Dichloropropane              |                | 87  |
| 1,4-Dioxane                      |                | 90  |
| Bromodichloromethane             |                | 99  |
| cis-1,3-Dichloropropene          |                | 87  |
| 4-Methyl-2-pentanone             |                | 87  |
| Toluene                          |                | 89  |
| trans-1,3-Dichloropropene        |                | 86  |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: CCV**

**Lab ID#: 0901521-13A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

|                     |                |   |
|---------------------|----------------|---|
| <b>File Name:</b>   | <b>x012902</b> | <b>Date of Collection:</b> NA             |
| <b>Dil. Factor:</b> | <b>1.00</b>    | <b>Date of Analysis:</b> 1/29/09 09:20 AM |

| <b>Compound</b>           | <b>%Recovery</b> |
|---------------------------|------------------|
| 1,1,2-Trichloroethane     | 81               |
| Tetrachloroethene         | 87               |
| 2-Hexanone                | 89               |
| Dibromochloromethane      | 90               |
| 1,2-Dibromoethane (EDB)   | 82               |
| Chlorobenzene             | 87               |
| Ethyl Benzene             | 86               |
| m,p-Xylene                | 88               |
| o-Xylene                  | 90               |
| Styrene                   | 84               |
| Bromoform                 | 97               |
| Cumene                    | 91               |
| 1,1,2,2-Tetrachloroethane | 94               |
| Propylbenzene             | 100              |
| 4-Ethyltoluene            | 85               |
| 1,3,5-Trimethylbenzene    | 99               |
| 1,2,4-Trimethylbenzene    | 93               |
| 1,3-Dichlorobenzene       | 99               |
| 1,4-Dichlorobenzene       | 100              |
| alpha-Chlorotoluene       | 100              |
| 1,2-Dichlorobenzene       | 99               |
| 1,2,4-Trichlorobenzene    | 97               |
| Hexachlorobutadiene       | 110              |

**Container Type: NA - Not Applicable**

| <b>Surrogates</b>     | <b>%Recovery</b> | <b>Method Limits</b> |
|-----------------------|------------------|----------------------|
| Toluene-d8            | 103              | 70-130               |
| 1,2-Dichloroethane-d4 | 113              | 70-130               |
| 4-Bromofluorobenzene  | 114              | 70-130               |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0901521-14A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

|              |         |                                    |
|--------------|---------|------------------------------------|
| File Name:   | x012903 | Date of Collection: NA             |
| Dil. Factor: | 1.00    | Date of Analysis: 1/29/09 10:03 AM |

| Compound                         | %Recovery |
|----------------------------------|-----------|
| Freon 12                         | 104       |
| Freon 114                        | 101       |
| Chloromethane                    | 103       |
| Vinyl Chloride                   | 95        |
| 1,3-Butadiene                    | 90        |
| Bromomethane                     | 110       |
| Chloroethane                     | 107       |
| Freon 11                         | 107       |
| Ethanol                          | 73        |
| Freon 113                        | 106       |
| 1,1-Dichloroethene               | 106       |
| Acetone                          | 93        |
| 2-Propanol                       | 95        |
| Carbon Disulfide                 | 90        |
| 3-Chloropropene                  | 100       |
| Methylene Chloride               | 100       |
| Methyl tert-butyl ether          | 108       |
| trans-1,2-Dichloroethene         | 86        |
| Hexane                           | 84        |
| 1,1-Dichloroethane               | 98        |
| 2-Butanone (Methyl Ethyl Ketone) | 82        |
| cis-1,2-Dichloroethene           | 83        |
| Tetrahydrofuran                  | 87        |
| Chloroform                       | 95        |
| 1,1,1-Trichloroethane            | 106       |
| Cyclohexane                      | 88        |
| Carbon Tetrachloride             | 107       |
| 2,2,4-Trimethylpentane           | 86        |
| Benzene                          | 86        |
| 1,2-Dichloroethane               | 113       |
| Heptane                          | 88        |
| Trichloroethene                  | 96        |
| 1,2-Dichloropropane              | 90        |
| 1,4-Dioxane                      | 94        |
| Bromodichloromethane             | 103       |
| cis-1,3-Dichloropropene          | 89        |
| 4-Methyl-2-pentanone             | 92        |
| Toluene                          | 96        |
| trans-1,3-Dichloropropene        | 88        |



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: LCS**

**Lab ID#: 0901521-14A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

|                     |                |   |
|---------------------|----------------|---|
| <b>File Name:</b>   | <b>x012903</b> | <b>Date of Collection:</b> NA             |
| <b>Dil. Factor:</b> | <b>1.00</b>    | <b>Date of Analysis:</b> 1/29/09 10:03 AM |

| <b>Compound</b>           | <b>%Recovery</b> |
|---------------------------|------------------|
| 1,1,2-Trichloroethane     | 85               |
| Tetrachloroethene         | 92               |
| 2-Hexanone                | 92               |
| Dibromochloromethane      | 94               |
| 1,2-Dibromoethane (EDB)   | 82               |
| Chlorobenzene             | 89               |
| Ethyl Benzene             | 88               |
| m,p-Xylene                | 90               |
| o-Xylene                  | 92               |
| Styrene                   | 86               |
| Bromoform                 | 100              |
| Cumene                    | 95               |
| 1,1,2,2-Tetrachloroethane | 94               |
| Propylbenzene             | 103              |
| 4-Ethyltoluene            | 87               |
| 1,3,5-Trimethylbenzene    | 99               |
| 1,2,4-Trimethylbenzene    | 94               |
| 1,3-Dichlorobenzene       | 99               |
| 1,4-Dichlorobenzene       | 100              |
| alpha-Chlorotoluene       | 103              |
| 1,2-Dichlorobenzene       | 97               |
| 1,2,4-Trichlorobenzene    | 99               |
| Hexachlorobutadiene       | 106              |

**Container Type: NA - Not Applicable**

| <b>Surrogates</b>     | <b>%Recovery</b> | <b>Method Limits</b> |
|-----------------------|------------------|----------------------|
| Toluene-d8            | 102              | 70-130               |
| 1,2-Dichloroethane-d4 | 115              | 70-130               |
| 4-Bromofluorobenzene  | 114              | 70-130               |



## CHAIN-OF-CUSTODY RECORD

## Sample Transportation Notice

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FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 1 of 2

Project Manager CHRIS GALE  
Collected by: (Print and Sign) D. STEPPONI C. Gale  
Company GEO SYNTETIC Email cgale@geosyntec.com  
Address 10875 RANCHO BERNARDO RD City SAN DIEGO State CA Zip 92127  
Phone 858-674-6559 Fax -

|                              |  |   |
|------------------------------|--|---|
| Project Info:                | Turn Around Time:                          | Lab Use Only                                |
| P.D. #                       | <input checked="" type="checkbox"/> Normal | Pressurized by:                             |
| Project # <u>SCO233-16-2</u> | <input type="checkbox"/> Rush              | Date:                                       |
| Project Name <u>POWAY</u>    | specify                                    | Pressurization Gas: <u>N<sub>2</sub> He</u> |

| Lab I.D. | Field Sample I.D. (Location) | Can #        | Date of Collection | Time of Collection | Analyses Requested | Canister Pressure/Vacuum |       |         |             |
|----------|------------------------------|--------------|--------------------|--------------------|--------------------|--------------------------|-------|---------|-------------|
|          |                              |              |                    |                    |                    | Initial                  | Final | Receipt | Final (psi) |
| OIA      | PVP-1A                       | 334071127109 |                    | 10:19              | TO 15 + TICS       | 29.28                    | 4.12  |         |             |
| OZA      | PVP-2A                       | 2139         |                    | 11:15              | TO 15 +            | 29.37                    | 3.90  |         |             |
| OBA      | PVP-4A                       | 34636        |                    | 13:41              | TO 15 +            | 29.48                    | 3.16  |         |             |
| O4A      | PVP-4C                       | 34162        |                    | 13:41              | TO 15 +            | 29.38                    | 2.90  |         |             |
| O6A      | PVP-5                        | 30828        |                    | 14:46              | TO 15 +            | 29.30                    | 5.17  |         |             |
| Oba      | VW-3A                        | 31756        |                    | 9:36               | TO 15 +            | 29.50                    | 2.88  |         |             |
| O7A      | VW-4A                        | 31757        |                    | 10:35              | TO 15 +            | 28.90                    | 3.58  |         |             |
| O8A      | VW-5A                        | 34615        |                    | 13:16              | TO 15 +            | 29.38                    | 4.07  |         |             |
| O9A      | OCFB                         | 1366         |                    | 13:16              | TO 15 +            | 29.00                    | 2.55  |         |             |
| O1       | VW-8A                        | 2197         | ✓                  | 14:22              | TO 15 +            | 29.38                    | 2.98  |         |             |

Relinquished by: (signature) Date/Time  
D. Steponi 11/27/09

Received by: (signature) Date/Time  
Fader 11/27/09 16:00

Notes:

for K. VAN ANDORI

FOR T/CS

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

| Lab Use Only | Shipper Name | Air Bill # | Temp (°C)  | Condition   | Custody Seals Intact? | Work Order #                         |
|--------------|--------------|------------|------------|-------------|-----------------------|--------------------------------------|
|              | <u>FEDEX</u> |            | <u>104</u> | <u>GOOD</u> | <u>Yes</u>            | <u>No</u> <u>None</u> <u>0901621</u> |



**CHAIN-OF-CUSTODY RECORD**

## **Sample Transportation Notice**

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Project Manager \_\_\_\_\_  
Collected by: (Print and Sign) AP 66  
Company \_\_\_\_\_ Email \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone \_\_\_\_\_ Fax \_\_\_\_\_

|                      |  |                     |
|----------------------|--|---------------------|
| <b>Project Info:</b> | <b>Turn Around Time:</b>                   | <b>Lab Use Only</b> |
| P.O. #               | <input checked="" type="checkbox"/> Normal | Pressurized by:     |
| Project #            | <input type="checkbox"/> Rush              | Date:               |
| Project Name         | Pressurization Gas:                        |                     |
|                      | Specify                                    |                     |
|                      | <small>N<sub>2</sub> He Ar</small>         |                     |

|   |           |   |               |                                   |
|---|-----------|---|---------------|-----------------------------------|
| Relinquished by: (signature)  | Date/Time | Received by: (signature)  | Date/Time     | Notes:<br>Future = 3962-8636 1030 |
|  | 1/27/09   |  | 1/27/09 16:00 |                                   |
| Relinquished by: (signature)  | Date/Time | Received by: (signature)  | Date/Time     |                                   |
|   |           |  | 1/27/09 16:00 |                                   |
| Relinquished by: (signature)  | Date/Time | Received by: (signature)  | Date/Time     |                                   |

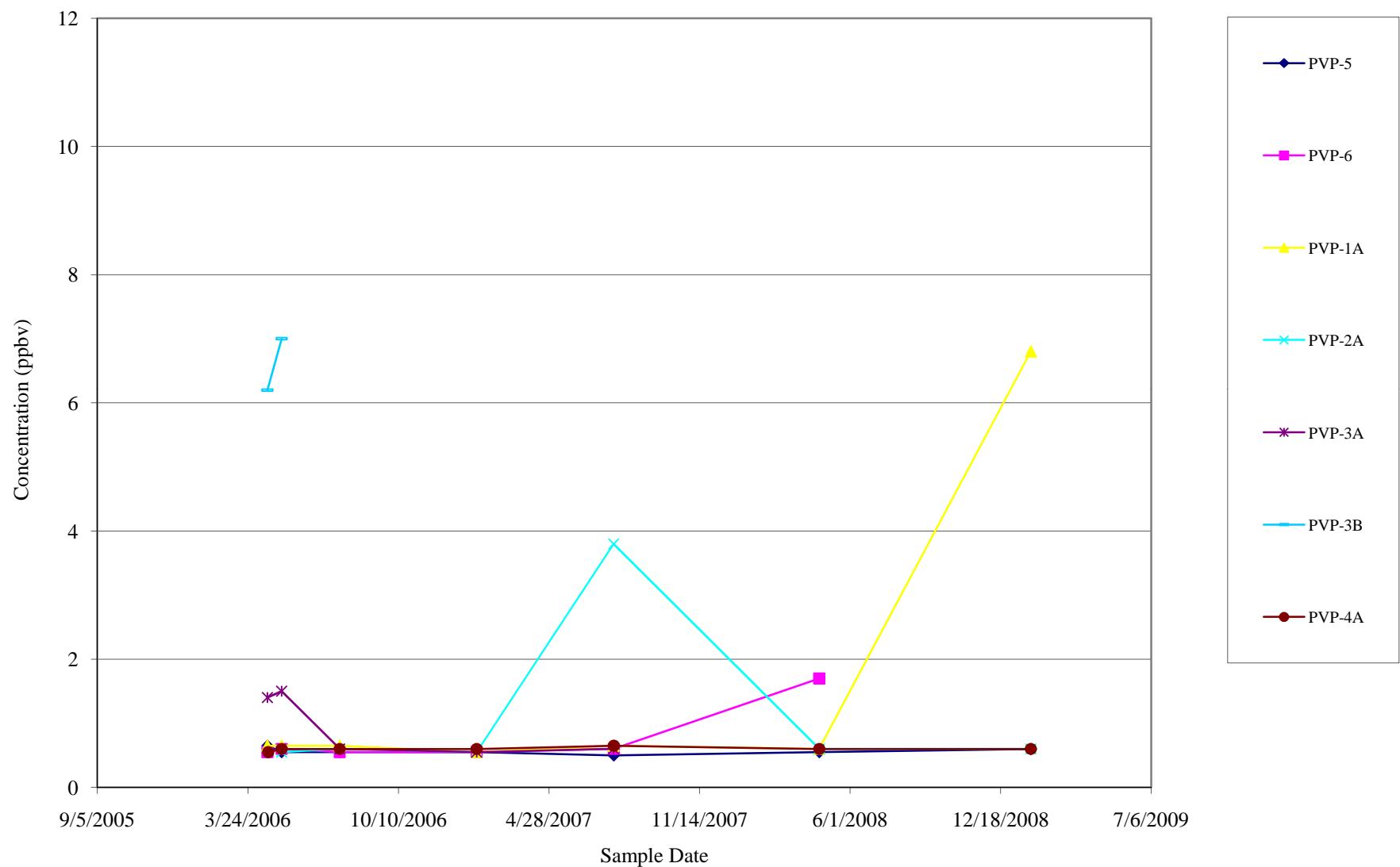
| Lab Use Only | Shipper Name | Air Bill # | Temp (°C) | Condition | Custody Seals Intact? | Work Order # |
|--------------|--------------|------------|-----------|-----------|-----------------------|--------------|
|              | FED EX       |            | DA        | GOLD      | Yes No                | None 0901521 |

## **ATTACHMENT E-3**

**Soil Vapor Time Series Plots**

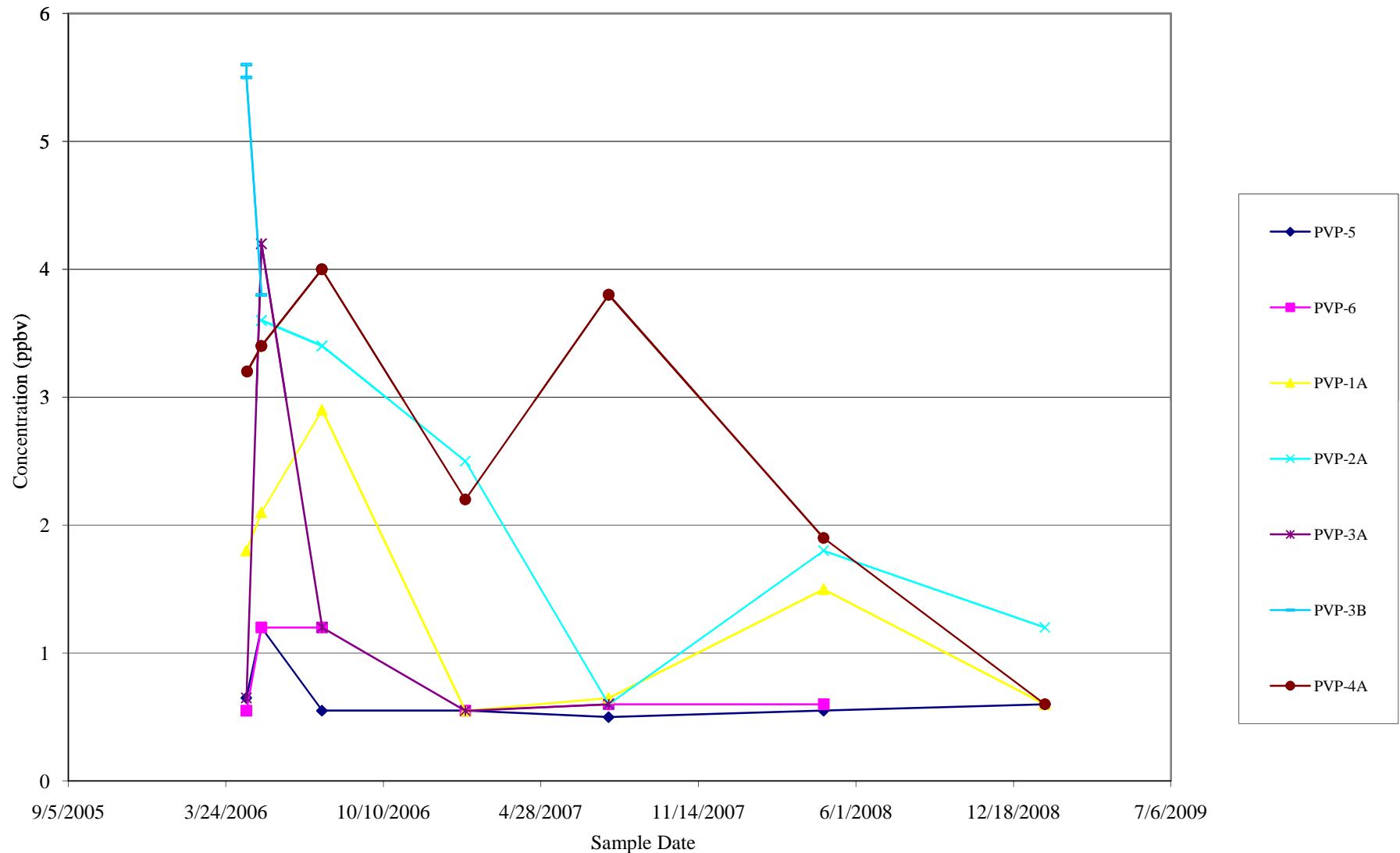
**Time-Series Plot for Benzene in Onsite Soil Vapor  
Poway Landfill**

**Geosyntec** consultants



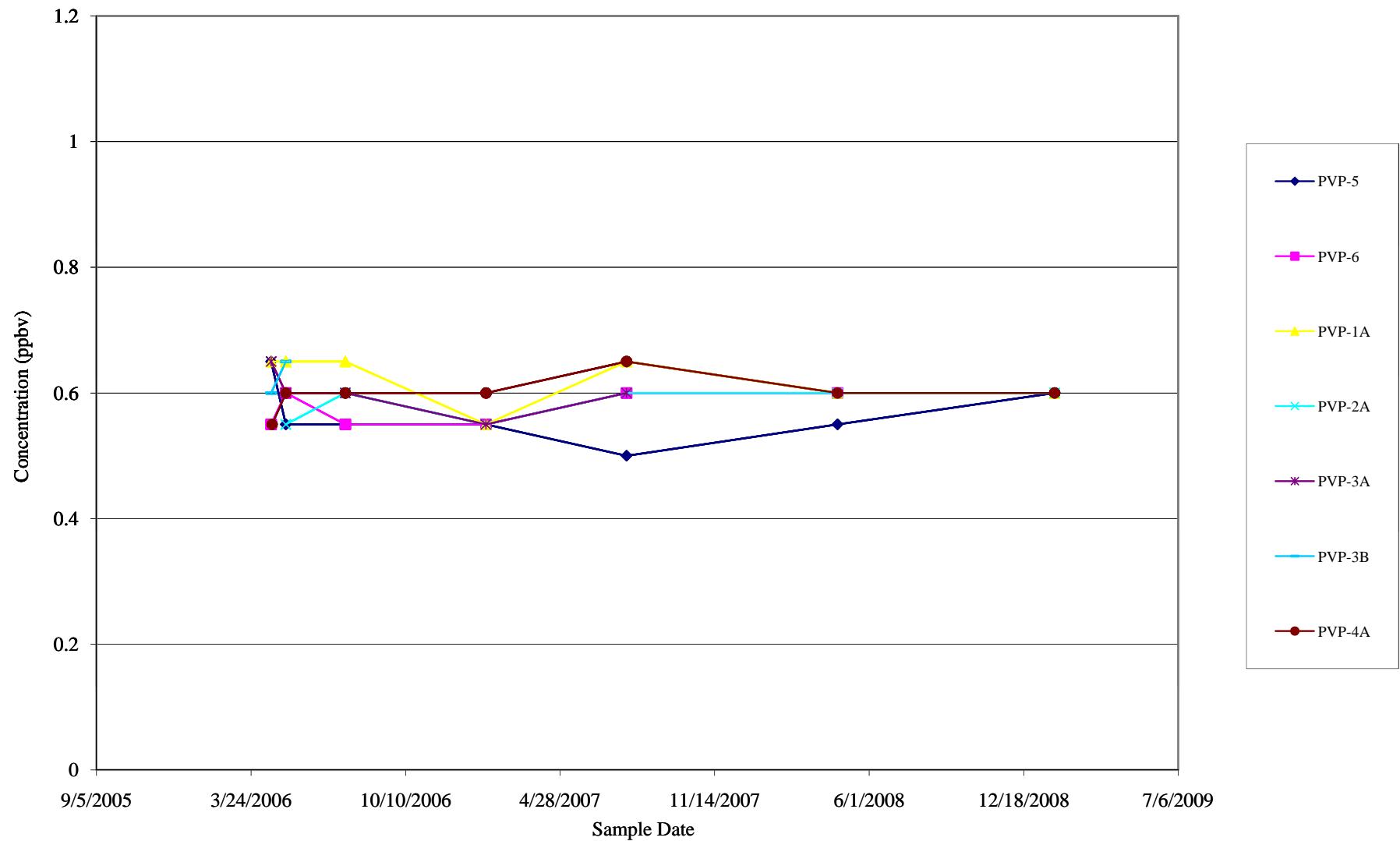
**Time-Series Plot for Tetrachloroethene in Onsite Soil Vapor  
Poway Landfill**

**Geosyntec** consultants



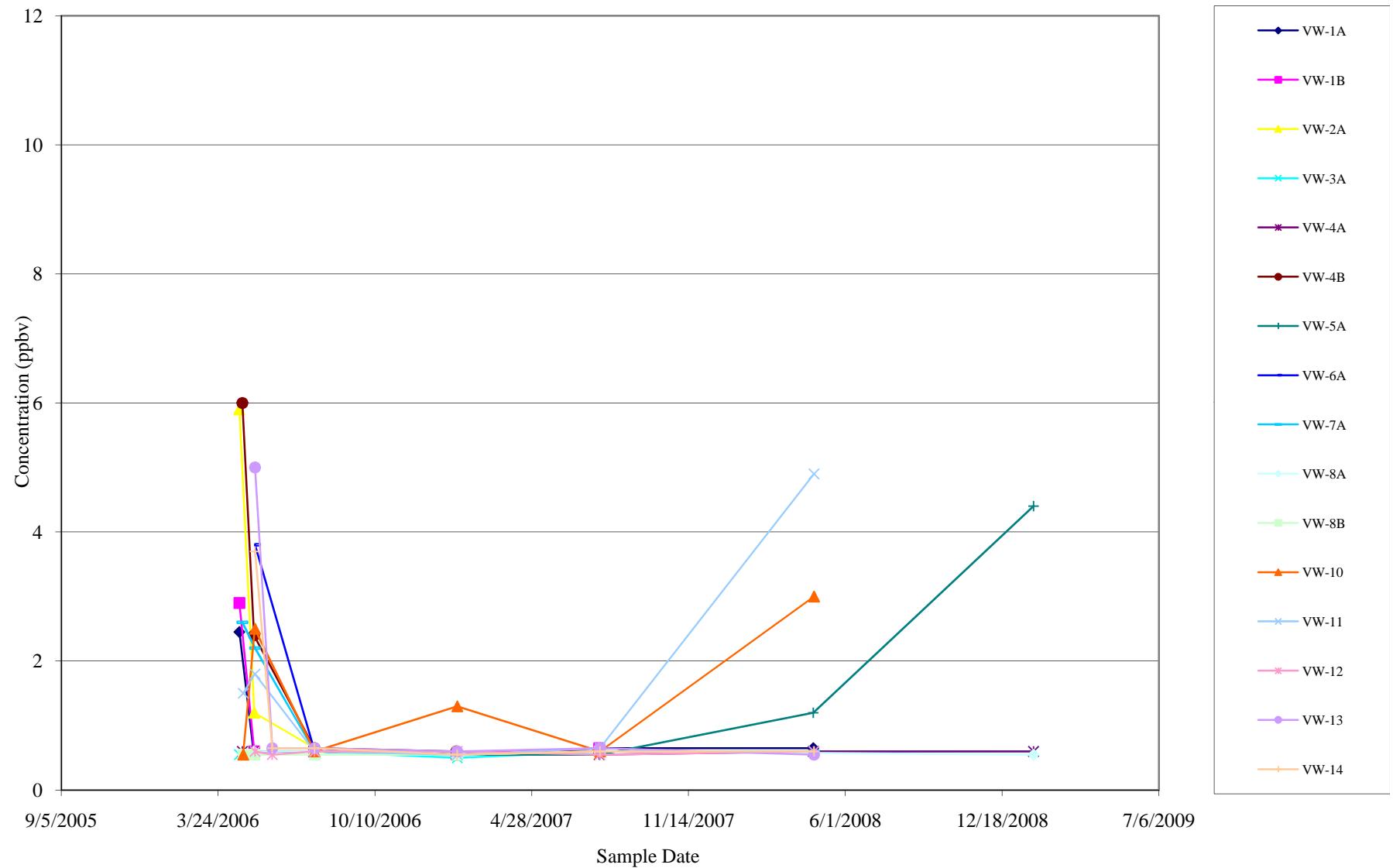
Time-Series Plot for Trichloroethene in Onsite Soil Vapor  
Poway Landfill

Geosyntec  
consultants



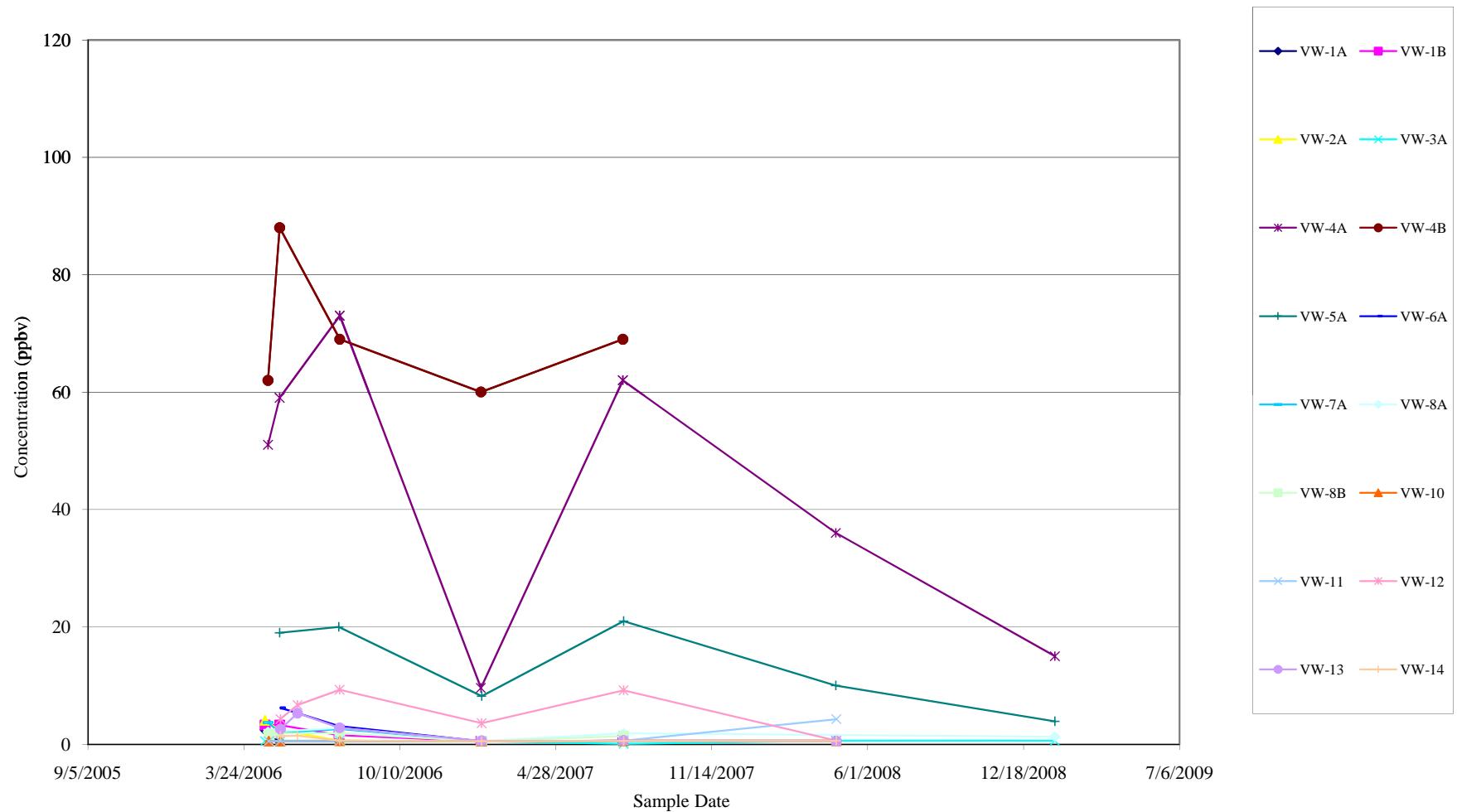
**Time-Series Plot of Benzene in Offsite Soil Vapor  
Poway Landfill**

**Geosyntec** ▶  
consultants



## Time-Series Plot for Tetrachloroethene in Offsite Soil Vapor Poway Landfill

**Geosyntec** consultants



## Time-Series Plot for Trichloroethene in Offsite Soil Vapor Poway Landfill

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